SWAT RECRUITING



JAVA 2 DEBUTS

RETAILER BETS BIG ON WINDOWS 2000

Quest to keep staff small takes Sears spin-off down risky road with new OS, robust WAN

Retail and technology observers are on the edge of their seats watching furniture retail-er Homel ife Inc.'s rollout of a

centralized Microsoft Corp. ws 2000 architecture.

To run the company, which Sears, Roebuck and Co. sold in January for \$110 million while retaining a 19% stake, CIO Christopher Smith will borrow

from the host/terminal model of the mainframe days and de- debut in February, although ploy only print servers in Home-Life's 127 stores. The Win 2000-

based infrastructure will depend almost totally on redundant connectivity in the wide-area network

and Active Directory. The servers will reside at the company's Hoffman Estates, Ill., headquarters and in Atlanta. dows 2000 will officially

Microsoft will finalize the code sometime this month. But rather than charging

most users will wait for months or even a year before adopting the new version of Windows 2K, page 16



SUPER BOWL ADS DRIVE IT BUILDUP

Dot-coms beef up tech to tackle Web site rush

Dot-com companies airing ads during this year's Super Bowl are making sure they don't fumble after the game.

Several are busy ramping up heir networks, hardware and databases to ensure their sites don't get knocked out by the expected surge in site traffic resulting from their Jan. 30

Super Bowl ads. Their efforts den the challenges dot-coms face in building systems capable of growing quickly to handle

in demand while offering data-center-like stability [News, Sept. 20]. And with ABC, which is broadcasting Super Bowl XXXIV in At-Super Bowl, page 16

\$22 BILLION FIRM TO OUTSOURCE SAP OPERATIONS

Contractor to run ERP projects for Tyco units

In what one analyst called a landmark deal, Tyco International Ltd., a \$22 billion manufacturing firm, has bired an application service provider to host and manage SAP AG ap-plications for its subsidiaries.

While many terms of the deal -- including its dollar value and exact scope - haven't been disclosed, analysts said it's unique because of Tyco's size and the fact that the company will outsource missioncritical applications

"I haven't seen anything this size. It may be an absolute landmark deal for a pure lap-plication service provider)." said Howard Rubin, a research fellow for Meta Group Inc. in Stamford, Conn.

Outsourcing, pare 93

IT SAVES

FOR YEARS, PROCTER & GAMBLE WAS SLAMMED BY animal-rights activists for using lab rats, monkeys and rabbits to test the safety of chemical ingredients. But the consumer products giant has turned the tide by using IT to eliminate 80% of its animal testing - winning some grudging respect from the activists. Gary H. Anthes describes how data mining and modeling lifted this company's social albatross. Story begins on page 44.

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comes to providing true non-stop service, you have only two choices: you can hope for it or you can ARCserve/T.













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DECEMBER 6, 1999

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I support 10,000 users, all of

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LART LEIBROCK, HEVERSITY OF
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Sun Unit Reomanizes of a recommendantion of its

ve Patricia Sueltz. James g, regarded as Java's inventor, will move to Son Laborate in Java standards offerts, will bead Son Lates, and Jon Kannegaard, former vice president of Java soft-

New York-based Cornet Systems Inc. is disputing charges involed last ik that its Web browser play in sted users' privacy by tracking

ino for medical supplies at arreshid.com. The site was cre by ASO Specially Healthcare Corp. in Orange, Call

OCTER & GAMBLE CO. CIO TAM

off retired last week; a succesed that a small percentage dura equipped with its Cop-CHAL, a Swiss based back connection, last used had week that a tech-

ATDEADINE E-Commerce Tariffs Key Issue at WTO

E-commerce proponents make gains in Seattle, but tax issues still loom

BE WORLD Trade Organization (WTO), which met in Seattle last week, was expected to extend the moratorium on tariffs for cross-border electronic transmissions, keeping e-commerce free of a resu-

latory burden that could stunt its growth. While tariffs are paid on products physically shipped to foreign countries, the WTO moratorium - established last year - prevents countries

from applying tariffs to goods that arrive electronically, such as software, music and videos. The tariff moratorium is an poortant issue with major U.S. software makers, which on average receive more than 50% of their revenue from sales in foreign countries, according to the Business Software Alliance

in Washington. If duties were applied to electronically transmitted software and other digital products and services, it "would effectively be a disincentive to [buyingl products from outside their markets," said Robert Holleyman, president and CEO of the software trade group.

boical Difficulties

Collecting tariffs on digitally transmitted goods from vendors located outside national borders. also poses technical challenges - a point U.S. Commerce Secretary William M. Daley made in Seattle in arguing against lift-

"If you impose them, they would be very difficult to collect. If you tried policing the collection of them, it would just slow the growth of e-co merce. And to be frank with you, we'd see a bunch of technologies developed to circumvent the law," Daley said. The WTO action on custom

duties, however, has no effect on the collection of sales taxes

or the value-added tax in Europe and other countries, which

are eyeing ways to collect those taxes on digital goods

The U.S. Advisory Commission on Electronic Commerce which will meet Dec. 14 and 15 in San Francisco, is also considering several taxing schemes. The commission's recom-

affect e-commerce worldwide, said Kent Johnson, a partner at KPMG Peat Marwick LLP, who covers e-commerce taxation. U.S. firms "believe whatever happens there is going to lead the way for the rest of the morld " he said Although e-commerce propo-

nents appeared pleased with the anticipated WTO outcome, the extensive protests against the WTO slowed the negotiations and had an impact on some. "It'a had a pretty negative efmendation on tax policies may feet, I think, on most of the

JUST THE FACYS E-Commerce And the WTO The issue: E-commerce to a relatively new case for the World Flade Organization, and

there are now less requisitors or barriers in place to hinder its growth, U.S. officials and tracks groups were to keep at that way Make goal: Continuing a moratorum

established lest year on custom dubes os electronic transversiones, diodal anords Still a problem: Albourt the U.S. c.ool

ting its way on tariffs, international tax saues on e-commerce are unresolved people in Seattle," said Jim Diemer, a senior information systems manager at the Port of Seattle, where President Clipton spoke last week. "We don't

States to Require Licenses For Online Auctioneers

Sites may lose commissions, but gain user confidence

BY STACY COLLETT North Carolina will soon crack down on auctioneers in the state who put items up for bid on the Internet without a By year's end, the North Car-

olina Auctioneer Licensing Board in Raleigh will distribute pumphlets to auction sites and the public, making them aware of a long-standing state law that requires anyone reselling items online to be licented or face misdames charges and a \$2,000 fine. The board earlier this month revisited the law and determined it also applies to the Internet.

Licensing Board Executive Director Bob Hamilton said the move is a preventive measure. "With the explosion of Internet auctions, we've extren to a point where complaints are just around the corner. And people don't know who to call," Hamilton said. A preliminary check of eBay Inc.'s auction site showed that some

20,000 auctions originated in North Carolina, he added. are charged with a mis demeanor offense and fined \$2,000. The license requirement

aldn't affect eBay and other auction mediators like Yahoo Inc. or Amazon.com Inc. Only the individuals or companies that are reseiting goods for cash or offering consignment from North Carolina would need to be licensed.

Officials at eBay and Amazon.com said they are researching the law's potential impact on their businesses, "We exnect our bovers and sellers to abide by all applicable laws,"

said Amazon.com spokeswoman Sharon Greenspan. Some industry observers said new license requirements are a double-edged sword for suction sites. "[It] will probably diminish the number of sellers but increase the confidence of

E-Crackdown

Who needs a Scance in N.C. o auction online? Anyone iving in the state who must pass a state exam and pay a \$225 fee.

w Violatora

like this kind of negative image that everybody is seeing.") buyers," said Vernon Keen Internet analyst at Keenan Vision Inc. in San Francisco. To become licensed in North

Carolina, auctioneers must noss an exam that tests their knowledge of state auction laws and pay a \$225 fee the first year, then \$100 annually. On Inn. I. fees will increase to \$250 and \$150, respectively. Initially, the board will seek to educate auctioneers, but eventually it will take proactive measures by monitoring auction sites and checking on auctioneers licenses, Hamilton said.

North Carolina isn't the first state to broaden its auction licensing laws. Four months ago, the New Hampshire Auction-eers License Board put notices in local newspapers telling online auctioneers they mu be licensed or face felony charges. But so far there's been little response, "We've had people call up and try to debate the issue" but not man new licensees, said Sylvia

Maguire, the board's secretary. A trade group of auction buyers and sellers opposes the new licensing requirements. For a state to decide ... these decades-old laws apply to us is absurd, especially when the fee is [more than \$200] and the penalties are criminal," said Steve Blake, chief operating officer at the Online Auction Users Association in Paso Robles, Calif. "There's a huge revenue stream in [online auctions), and states are just figur-

ing out how to tap into it."

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Bankrupt Retailer Bets Microsoft Talks Begin, but On Inventory System Settlement Seen as Unlikely

Buys software to improve bottom line

TAHOUGH ply-chain management systems can be trustrating and slow to

implement, Service Merchandise Co. is counting on a \$4 million system to pay off in 12

ClO Ken Brame last week said the retailer will implement a warehouse and inventory management system from White Plains, N.Y-based Optum Inc. in its three warehouses by summer. It's crucial that the system pay off quickly because the Nashville company is trying to emerge from Chapter II bankruptcy protection [News, Feb. 15]. The retailer anticipates labor

savings of about \$2.5 million. Brame said the system will not only save money by greatly boosting the efficiency of warehouse and store workers, but it will also boost revenue by increasing the chance that items will be in stock at Service Merchandise's 223 stores. Brame said be expects the following three main benefits: m The system will be able to coordinate demand forecasts from stores with advance ship notices from suppliers. The coordination will let warehouse workers take newly arrived merchandise and put it right on the truck to stores that need it. Brame said the system will

stock performance by 10% and boost sales by 5%. a it will enable workers to use radio frequency devices, allowing them to stay in their zone of a warehouse rather than going back and forth to a ticket printer, Brame said. The devices can scan a crate to ensure it's the correct one. The system will also increase the securacy of deliveries to store from 99.6% to 99.8%, be said. The system will let the com pany pick merchandise in real time after it's ordered via the

increase the company's in-

Web. That will reduce the need for a separate fulfillment center to stage deliveries to e-commerce

Many com have had difficulty pinning down a return on their investment in supplychain management

software. But analyst

quickly. Optum and warehouse management systems from

firms like McHueh Software International in Waukesha. Wis, and HK Systems in New Berlin, Wis., have matured in recent years. An W. W. Grainner Inc. Greg Girard at AMR Research tast year helped Optum hone inc. in Boston said Service its deployment practices, Gi-Merchandise could realize rard said.

comment last week about the

Despite starting talks last week aimed at settling the Microsoft Corp. satisfrust case, the U.S. Department of Justice is pressing ahead to devise potential fixes for the vendor's alleged

The Justice Department hired Greenhill and Co., a New York investment firm, to advise it on remedies, the department confirmed. Neither Microsoft por the Justice Department would

Dell Joins the 'Legacy-free' PC Movement

Dell Computer Corp. in Round Rock, Texas, last week announced the launch of its Webpc, joining the ranks of vendors offering or promising

legacy-free PCs. Legacy-free PCs come with out a serial or parallel port or a Peripheral Component Interconnect (PCI) expansion bus.

"Combined with Windows 2000, these could be the most reliable PCs we've ever seen." said Rob Enderle, an analyst at Gigs Information Group Inc. in Santa Clara, Calif. He predicted that small, legacy-free PCs will become the dominant commercial desktop hardware within two years.

But unlike competitors su as Compaq Computer Corp. Dell is launching its Webpo in the consumer market first The device is priced from \$999 for an Intel Corp. Celeron 433-MHz system with a 15-in, monitor, printer and a year of Internet service. Enterprise systems are expected to follow later.

"Their bet is that consumers will be the first to go legacyfree: Compaq's bet is that the enterprise will be first," Enderle said.

Compag last month announced the iPaq, a small PC for enterprises. The iPaq has no PCI expansion slots, but some versions have serial, parallel and PS/2 ports. Hewi

very similar e-PC concept but won't ship systems until the Gove half of next year. IBM recently discussed a

concept it calls Edge Of Network (FON), which describes the PC's new role as a device that's peripheral to the network. As a part of EON, IBM will announce its own batch of legacy-free PCs in April.

Brian Smith, project manaministration at Health Services Foundation in Charlottesville, Va., which provides billing services for the University of Vir-

cinis hospital said he would consider buying legacy-free PCs. He said they could cut technical problems like inter rupt conflicts.

"I think it would make the system a little more stable. [though] a lot of the stability problems are software-related." Smith said. He said his firm has little use for serial or parallel ports. But, he added, the PCI slot is regularly used to install new graphics cards or debug network problems with oard network cards by installing a PCI network card 1

start of settlement talks here. mediated by court-appointed referee Judge Richard Posner.

The parties met at the urging of the judge overseeing the government's case against Mi-crosoft. Judge Thomas Penfield Jackson said several times during the trial that be would like to see the case settled, but the vendor and the government baven't been able to come to terms yet

Some abservers doubt a settlement will happen, despi statements from both sides that they would like to settle "What people say in public and private may be two different things, but I don't think then will come together," said Yes Wab Chin, an antitrust lawyer st Squadron, Ellenoff, Plesen & Sheinfeld LLP in New York.

Class Action Suits Continue Meanwhile, federal antitrust

lawsuits against Microsoft continue to sprout. Consumers. hopeful for class action status, recently filed cases in Florida. Illinois, Ohio and Washington D.C. They joined similar suits in Alabama, Louisiana and New York [News, Nov. 22], All claim Microsoft has routinely overchanged consumers. A Microsoft spokesman called the suits "groundless." 9

MCI WorldCom Blamed for Sky-High Errors in SkyTel Bills

Customers of SkyTel Communications Inc. are complaining about billing system problems and blaming the October acquisition of the pager company by MCI WorldCom Inc. *Tve consistently had billing

problems in the past few months — overbilling, late billing, help deak problems. It's clear the company's in transiuser Larry Leibrock.

As chief technology officer and associate dean at the Graduste School of Business at the

University of Texas at Au

Leibrock is paged 30 to 50 times per month. "I support 10,000 users, all of which wake up every morning with their hair on fire, which makes my pager critical to my success be said. Billing problems make "it harder for us to depend upon that umbilical cord.

Leibrock said SkyTel customer service representatives told him the problems are due to the MCI WorldCom acquisition. People at other compa-nies, including Gartner Group Inc. in Stamford, Conn., have

had problems with SkyTel's billing and network availability be said

Tracy Corbo, a senior analyst at Gartner Group's Dataquest division, said SkyTel overbilled her credit card by \$1,700 Nov. 1 and didn't correct it until two days later. "I could understand \$10 or \$11 - but \$1,700?" Corbo said. "There was nothing from SkyTel to notify their customers. When I problem is, they're not answer ing what happened, why it happened and will it happen again. They said the [informati technology) department would

SkyTel spokesman Mars Kuykendail said he was unaware of the billing problems



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Polar Lander mission: Science, adventure and lessons in networking, too

HILE Scientists around the world salivate at the prospect of pling soil contents and finding water on the red planet, corporate webmasters and network managers may be eye-ine NASA's Mars Polar Lander mission from a more down-to-

Earth perspective.
NASA and its contractors have built a heavy-duty Web site that's expected to take 250 miltion hits in the first three hours after Mars photos are beamed to it - far more traffic than e-commerce sites would ever see in such a short time span.

Cable and Wireless USA (C&W) in Vienna, Va., is providing the Internet backbone and four regional server cen-ters that will feed Lander photos from the Deep Space Network at the Jet Propulsion Lab-

oratory in Pasadena, Calif., to the Internet The last Mars photos car from the Pathfinder mission in 1997 There were about 100 million hits for Pathfinder photos in the first few hours of availability, and experts have guessed that the audience will be two and a half times larger this time, sources said. · C&W said strategically placSan Francisco - was intended to assure that there would be no

single point of failure.

Moreover, by connecting these servers to its 10G bit/sec. backbone, C&W figured the plumbing was in place to handle all the traffic earthlings could muster.

But just in case everybody in one city decides to mouseclick at the same time, loadbulancing technology from attle-based F5 Networks Inc. is being used to eveo out the Lander photo load across the four server centers

For example, if heavy early morning Web traffic in the Northeast were to overload the New York server, Web requests could be automatically diverted to San Francisco, where hit rates would be lower because of the time-zone difference.

To increase the availability of the most popular Polar Lander photo files, C&W also has placed file-caching devices from Network Appliance Inc. in Sunnyvale, Calif., at each server center.

The caching systems monitor repetitive requests from different users for the same information and store the appropriate data at the very edge of the network. That speeds access for users and frees up the primary servers to increase overall network performance. The images will be available at www.MarsPolorLander.orx and at http://MarsLander.ip nasa.gov.

jor metropolitan areas - Res- servers in four major metro areas

ing server sites in the four ma-Online Spending Doubles Over Thanksgiving

The online holiday shopping season lived up to the hype for Thanksgiving week, as shoppers spent more than half a bilollars at retail sites, doubline the previous week's total. According to a joint survey by PC Data Online Inc. in Reston.

in New York, the number of visitors doubled at online toy, music, electronics and apparel sites. Survey figures included purchases of gifts, travel, entertainment and computer hardware and software. Even "Black Friday" - the

tionally the busiest shopping day of the year - saw online traffic increase 18% from the day before the holiday, according to Nielsen Media Research Inc. and NetRatings Inc. in New York. Traffic at online toy stores spiked 83% on Nov. 26

Pitney Bowes

Outsources Help Desk Pitney Bowes Inc. in Standard, Conn., amounced that it will cut-source help deak software suppor to PC Holps Support Inc. in Bala Cymayd, Pa. Pilmey Reuse is a S4

J. D. Edwards Souraks Out Profit

J. D. Edwards & Co. reported that it shed out a \$130,000 profit in its fourth quarter anded Oct. 31. The

sared with sales Nov. 24. EToys Inc. maintained its lead over rival Toysrus.com in both traffic and growth from the previous week, with 1.8 million visitors vs. 920,000 at Tourses com

"Things are buzzing for us. We've been preparing for this holiday season since last Dec. 26," said Ionathon Cutler, a spokesman for Santa Monica, Calif.-based eToys.

This year, eToys converted to an Oracle Corp. database, nanced its customer service operations, upgraded proprictary software in warehouses and distribution facilities and added distribution centers in

Minn., according to Cutler. Even toy sites stung by early online shopping glitches (see related story, page 22) raked in

Toysrus.com, plagued by a system slowdown in early November after it offered free shipping and discounts to 64 million customers, doubled its online sales last week.

It even squeaked by eToys in number of site visitors for a few days a week earlier, according to Allen Weiner, vice president of analytical services

Since its early holiday snafu, Toysrus.com has added server capacity and invested in infra-Provo, Utah, and St. Cloud, structure support.

Online Retail Winners

c for week ended Nov. 28, compared with the first e Toys.com, Toysrus.com

BestBuy.com, 800.co

Gap.com, LandsEnd.com, Crewcom

ten, Galif., has been

world devices, ng the Windows CE

union macher energy et aut up a video link land ok that will be used to share program about their suction

nd. The intent is to give the se real-time help if the date triggers an accident like the



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SEC to Weigh New Trading Rules

If approved, changes would allow brokers and electronic trading networks to trade Big Board stocks

and Exchange Come (SEC) is scheduled to discuss potential rule changes that would effectively open up access to trading stocks on the New York Stock Exchange (NYSE). The actions being considered wo

ske it easier for electronic trading trade Rie Board stocks.

One of the recomm hed would allow brokerages that are ers of the National Association of Securities Dealers Inc. (NASD), the parthet Inc., full access to the NYSE's aks the Big Board with the NASD and The NYSE has been pressured by mem-

regional stock exchanges (see chart). Such a move would create greater in-

teroperability between the NASD and the NYSE and be a big step toward creating the kind of unified marketplace SEC Chairman Arthur Levitt has been calling for.

"History has shown that the markets have become more fragmented, which isn't a good thing for investors" because that often makes it more difficult to get the best available stock prices, said Bob lati, an analyst at TowerGroup in Need-

Last week the NYSE repealed its Rule 390, which had prevented mem bers from trading on other exchanges any stock that had been listed on the NYSE before 1979 [Business, Nov. 29].

man, Sachs & Co. in New York to lift rules that prevent brokerages from executing trades faster and more cheaply such as Island FCN in

Merrill Lynch & Co. and other Wall Street titans ments in ECNs that match stock trades. Up until last week, ECNs had been prevented from

the SEC is a recommendation for the

Would broaden NASD memb access to trading NYSE stock Trading NYSE initial public offerings (IPO) Addresses how much online brokers will have to pay NYSE and NASD for stock quotes

Street, "since there's a lot of data flooding NYSE, Nasdaq and the American Stock Exchange to reduce the costs of providing stock-quotation data to benkrages.



Microsoft Proposes SOAP Standard

Web 'bridge' for Win apps raises security auestions

Microsoft Corp. last week sub the first version of its Simple Object Access Protocol (SOAP) to the International Engineering Task Force (IETF). While acknowledging the proposed protocol's value, users and analysts said incorporating it into Web development ects is still far off and also raise

Based on HTTP and Extens Markup Language (XML) Web stan-dards, SOAP lets remote procedure

calls (RPC) ferry past Web site firewalls. For security reasons, most firewalls reject non-HTTP requests. By ing HTTP as its transport mecha-im and XML syntax, SOAP RPCs lestep that issue and enable applicaes to process service requests from plications on intranets and the Web. Analyst David Smith at Gartner Group

Inc. in Stamford, Conn., said SOAP is absolutely critical to Microsoft's credibility on the Internet because it bridges the gap between the software giant's desktop applications and the Web.

the security of SOAP RPCs. "The secu-rity issues have not been addressed. It's the big unanswered question," he said.

isfy them. But it's a necessary model, so they will have to figure something out." Mike Yorwerth, a project manager at Marks and Spencer PLC in Middlesex. England, said he is aware of the pro posed SOAP standard and is wat its development closely. Marks and Spencer's 300 retail stores are based on Microsoft's Window NT and BizTalk

rvers. "It's very useful to send a SOAP call across Web servers with XML and get the information back," said Yorwerth. "But it's not something we have

Smith said developers' exposure to SOAP is limited right now but he ex-pects to see SOAP RPCs embedded in new applications within a year's time or sooner, depending on the level of sup port the proposed standard receives from other vendors.

Microsoft plans to build the SOAP specification into its Windows Distributed interNet Applications Architecture (DNA) 2000, officials said. IBM and Sun Microsystems Inc. both plan to review the SOAP specification.

Scott Hebner, program director for business technology marketing at IBM, said his firm would look for adherence to existing standards when reviewing SOAP and questioned whether the proposal warrants wide support as a standard.
"Clearly, Microsoft has identified a need, but is it tied to getting DNA and Windows tied to the Internet or is it

Thinking outside the box led us to this one.

the power and reliability once available only on large UNDL/RISC systems and mainframes. And at a fraction of the price. It's based on our revolutionary Cellular MultiProcessing architecture. Which means the ES7000 can run Microsoft" Windows" 2000 and UNIX in the same box at the same time. And it seamlessly links to your legacy system, critical for doing transaction-heavy business on the Web, But that's not all, Employing 32 Intel Pentium® III Xeon™processors, the ES7000's unique platform allows it to handle the unpredictable loads of e-business - providing unprecedented levels of performance, reliability and agrity. The Unisys e-litction ES7000 is the latest in a series of outside-the-box ideas from the people who never stop thinking of ways to make your business better. To find out more, go to www.unisys.com/ent.

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Sun to Launch Java 2 Enterprise Edition

That left vendors trying to

(EJB) components that many

users wanted. And lava applications that were supposed to

run anywhere really couldn't

because vendors had created products with slightly differing

implementations of EIB tech-

"Anytime a vendor puts pro

prietary application program-ming interfaces or technology

into their products, you have

an issue on reusability," said Ricky Tapper, director of ap-

plications architecture at Scient Corp. in New York. "Reusability is [important] for me. It means a lot less work and enables you to leverage what you've done in the past. An early version of EJB perged in April 1998, but Giga Information Group Inc. analyst Mike Gilpin said he ad-

Users should gain ability to run Java applications on any server products

BY CAROL SLIWA open to interpretation, like most specs are," said Jim Gish, UN MICHOSYSTEMS Inc. this week will a senior project manager architect at GTE Laboratories Inc. launch its Java 2 Enterprise Edition de-velopment platform. in Waltham, Mass. Fill the Gans which is welcome news for eate users who someday hope to run lava applications fill in gaps and support early versions of the Java 2 enterprise technologies, particular-ly the Enterprise JavaBean

on any server software. The Palo Alto, Calif., com ny will announce the comoletion of the reference implentation and test suites for the set of server technologies at the Java Business Conference in New York.

adopters said they had to work around gaps in the technology or find vendors that supported the pieces of functionality they

Other users are waiting for the technology to mature.
"The difficulty is that the spec [has been] somewhat

vised clients to wait until last mer for any serious EIB work because of the immaturi-

ty of the available products. Those who couldn't wait often had to improvise to solve their problems. One Giga client in the banking industry had to write a JavaBean com-

ponent to save data onto the database, Gilpin said. In the future, developers won't have to write that code be-

cause that function will be han dled automatically by application servers that support "container-managed persistence.

That feature was so important to Detroit Edison Co. that it was a big factor in the selection of an application server The company settled on one from Cleveland-based Secant Technologies Inc. last sum Single-Threaded Approach

Before the technology's arrival. Detroit Edison poted for

a lightweight architecture, taking a single-threaded approach for database connections Staffers knew the architecture wasn't scalable, but they needed the application running quickly at low cost, said Stephen Goldstein, chief information technology architect at

He likened it to building a 100-apartment building in which 100 sinks couldn't draw water at the same time. But Goldstein said the compa didn't want to build that scal able architecture. "We wanted to buy it," he said

Likewise, Mark Johnson, a vice president at Banc One Corp.'s commercial division in Chicago, said be was content to wait for Oracle Corp. develop-

ment tools to support EJB.

Johnson also said he wanted a compelling business reason to move to EIB and now has one, with two distinct sets of users needing to access the same data. New features in EIB will help him build the application without having to write as much code.

ORFONI IMF

For stones, publications, organizations a other resources related to Java, your our

Sun. Inprise Plan to Port Java 2 to Linux

Move will boost both Linux and Java

Java creator Sun Micro Inc. and application develop-ment tool vendor Inprise Corp. will announce this week that they're porting the Java 2 de-

erating system, a source close to Inprise said. Support for Java 2 on Linux broadens Java's cross-platform

nals that Sun, which is regarded as ambivalent and even hos-tile toward Linux, has begun to shift its support of the Unix

earlier versions of law to Linux, but Sun and Inprise hope to be the first to enable a Linux version of Java 2, which has the velopment kit to the Linux op-

most potent capabilities for enterprise and e-commerce use. Inprise's Java development tool, JBuilder 3, requires Java 2 to run, and its application server requires a Java 2 de-velopment kit to be used.

said analyst George Weiss at Stamford, Conn.-based Gartner Group Inc. Sun can promote Linux as an alternative to Windows NT on cheap Intelcan also score public relations points with the open-source

community, which has been cool to the vendor. "Sun has somewhat of a critical reception in the open-source community because of its community source license and its ambivalent position with regard to Linux," Weiss

Whether Sun and Inpris can win over users is an open question. The Home Depot Inc. in Atlanta is testing Java on Linux as the potential infrastructure for its in-store applications, said application deve opment manager Kathy Tad lock. The company became interested in the idea after IBM released a beta version of a Java virtual machine for Linux in June. Tadlock said Sun and In-

prise's move will allow them to compete for Home Depot's business, but she added that it isn't crucial for Home Depot to execute its plans, b

Senior editor Carol Sliwa contributed to this story.



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Motorola Pumos Uo **Vireless Speed**

ericas Congress '90 in inco last week. Motoroia sion Multiple Access (A) circuit achieves its high ed using idle radio frequency I channel capacity, according to tensia Trials of the circuit are

Sales Force Software Revenue to Soar

15 million last year to almost billion by 2003, according to test research firm bet Corp. (IDC) in Franc

Mibris Pleads Guilty To Intercepting E-Mail

addresses and paster mazon.com inc. and of rnet book retailers and using in to build a database of the net-selling book titles.

Affirit planted guilty in U.S. District Court in Springfield, life to II charges, a court spokessor led interior inc., which marge in Albeis in May 1998, but the cours said the Slegal

Palm Names CEO

Worm Highlights Weak Defenses

Customers, vendors look for better tools after MiniZip evades antivirus software

INIZIP, a compressed versioo of the Explore-Zip worm, infected thousands of companies around the world last week. The episode highlighted the weakness of products that must identify the code in order to

block it. The MiniZip worm uses a little-known shareware compres sion program called Neolite, which allowed it to slip past many antivirus tools and infect companies before a cure could

The MiniZip worm infects computers the same way as ExploreZin: via an attachment containing executable code that deletes files and sends cted messages to others. It affects systems running Microsoft Corp's Outlook, Outlook Express and Exchange. "Antivirus tools are limited

in what they can do because

happened before. And if a bad guy thinks of [something new]. the current techniques are inadequate," said Avi Rubin. author of The Web Security Sourcebook and a security expert at AT&T Labs in

Florham Park, N.J. Dan Schrader, vice president of new technology at Trend fingerprint of the malicious | Micro Inc. in Cupertino, Calif., acknowledged that his company's products

didn't scan for files pressed with Ne-"The problem with antivirus software is that it's inheren reactive. We have artificial intelligence for identifying viruses, but virus writers are

good at petting around beuristics," Schrader said. Information technology managers said this worm is troubling because it evaded antivirus software. "Unfortunasely, this is like every other virus. Someone has to get it and send it to antivirus companies to isolate before they eveo know about it," said ferry Malthey are based on what has donado, director of technical

Care Ltd., a systems integrator Sal Viveros, group market-

ing manager for Total Virus Defense, a product from Network Associates Inc. in Santa Clara, Calif., said his company offered a MiniZip update to its antivirus tool almost a full week before companies reported infections, but many businesses didn't update their antivirus files before the

Thanksgiving holiday. But he insisted no antivirus product could have detected MiniZip unless it had a specific update. "It is impossible to detect beforehand all the different variables [used] to write a malicious attack* Viscoros

Ron Moritz, chief technology officer at San Jose-based Finjan Software Inc., disagreed. He said his company's Surfin-Gate First Strike Security product blocked MiniZip by setting policies to disable exe-cutables that erase file cootent. "Most organizations are saving. We don't want executables delivered by e-mail, and we don't have a problem with a policy that blocks it," be said.

Viruses, Worms Proliferating

viruses is growing? You're right.
"We get 10 to 15 new viruses overy day," said Carey Machenburg, chief researcher at Syman Inc. Corp. 's Antivess Research toc corp. S Antwess Research Conten in Sents Monico, Calif. Viruses, typically spread vis-e-mail or floopies, aren't the real threat. That dubious detriction belongs to computer women, suc as the ExploreZip visitant of the infamous Melissas. Machenberg seed. "A worm desen't well for we

said. "A worm doesn't wait for you to e-mail it. it spreads itself." Computer Associates Interna-tional Inc. in Islandia, N.Y., is advis-

tributing new virus and worm deli-nitions to each machine on a net-work, a full-scale relout of daily antiviess updates would probably be overdoing it. Nachemberg said. "If you're going is a daily update, if day just do the e-mail gatiway because a lot of worms. viruses on Jier. 1, but Typically we can tende them all by adding one or two new signatures" to the company's artivirus software.

Integration Parade Proceeds

More tools readied to link apps via Net

Application integration tools aimed at belping users set up business-to-business links via the Internet are starting to flood the market

For example, TSI International Software Ltd. in Wilton, Conn., last week said it plans to ship an integration engine that can support business-tobusiness e-commerce applica-

Also last week IRM said It's starting to resell business-to-

ogy developed by San Josebased Extricity Software Inc. Tibco Software Inc. in Palo Alto, Calif., is expected to join the parade this week by announcing tools for developing Web-based portals that link systems at different compani But despite the flurry of an-

nouncements, software analysts cautioned that creating e-commerce connections between manufacturers and their suppliers and customers is still easier said than done.

For users who want to automatically route purchase or-ders, shipping invoices and other transactions to external systems via the Internet, "the lintegration) burdle has risen with multiple companies."

p to the highest level* of complexity, said Ed Acly, an analyst at International Data Corp. in

The new tools should make vendors to target internetthe job of tying together dissimilar systems less bewildering. Acly said. But getting multiple companies to agree on common ways of doing business remains an obstacle that needs to be overcome before the tools can belo, he added.

The difficulty of setting up

automated business-to-business links "is still an issue, but the business side is going to be a bigger problem," said Kimberly Knickle, an analyst at AMR Research Inc in Boston. Most users "really don't know how to work (online)

Knickle said. "E-business escalates all the ways you expose and share data." Extricity was one of the first

based integration among dif-ferent companies [Technology, June 71. But only 20 users have gooe live with applications uilt around its software so fac. IBM plans to resell Extricity's e-commerce tools alongside its own MOSeries middle ware, which routes messages from application to applica-tion. Similarly, Tibco's portalbuilding tools can be tied to its rival middleware pipeline.
To get its software ready

for e-commerce, TSI is adding support for converting data into Extensible Markup Laneration tools with a Web application server 1

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ERNST YOUNG

Super Bow than 100 million viewers in the

U.S. dot-coms buying primo commercials are practically inviting surprises

Take New York-based Hot-Jobs.com Ltd. Last year, the any spent \$2 million half of its total revenue - for a 30-second spot at advertising's

uce event The resulting 120% surge in site traffic during the week following the game - from just over 800,000 hits per month viously - was beyond the ompany's wildest expectations. But the surge also choked its inadequate network

and server infrastructure and locked out tens of thousands of frustrated users from its site for days af-

This year, Hottobs com will again air a commercial during the game, but this time it's taking no chances. We are expecting two months' traffic in a one-week time frame.... With that

kind of a compres sion, we are looking at all aspects of our infras said company CIO George Nassef Ir

The company has increased site capacity sixteenfold - It won't say how many servers it has - and has made multiple images of its main Oracle Corp. database to minimize the truffic hitting any one copy. The company's Sun Microsystems Inc. servers and EMC Corp. storage technology sit behind a high-bandwidth meshed network, where each e to the server is backed up by another, providing a one-hundredfold performance in crease over that of its previous TI lines. Sophisticated load-balancing switches direct traffic via the fastest available pipes to the servers.

Planning site capacity ter to be a risk vs. investment decision," Nassef said. Following last year's debacle, "we decid ed to eliminate the risk by ing whatever investment

Michael Budowski, CEO of

OurBeginning.com Inc., an on-line invitation Web site, figures his company will spend more than \$500,000 on similar upgrades to its servers and networks in preparation for post-Super Bowl traffic. The Orlando company is still finalizing what technology to imple-ment, but Budowski said he

thinks it will ultimately comprise new high-end servers, load-balancing switches and redundant T3 petworks. The company is also considering eading its servers over multiele locations. When complete, the new setup will improve performance tenfold had in place since it started op-

erations in April, Budowski "We are going to be spend-ing nearly \$4 million on the Su-per Bowl," Budows-

ki said. "Service failure is simply not an option." Jordan S. Olin, chief technolo officer at vet-to-be Isunched Computexcom Inc., isn't sure what the traffic will be after the Bowl ads hit the air.

my's site, which will

offer computer tips

and advice to novice users, has been configured to take at least I million hits per day if needed, Otio said. A prime design goal for both the lone term and to handle the

more immediate Super Bowl rush is to "eliminate all single points of failure," Olin said. A pair of high-performance switches capable of handling as many as 96,000 simultane ous hypertext requests will control and manage the flow of traffic to the company's rack-mounted database and Web servers. Mirrored servers, networks, firewalls and datab will provide reduc

"You really have to just annlyze and see what kind of re-sponse you are likely to get in a worst-case scenario" and budevery-case scenario" and bud-get accordingly, said Tommy Pu, chief technology officer at Angeltips.com Inc., another Super Bowl advertisez.

ter.com, which made a splash at last year's game, plans to quadruple its cluster of 10 Dell Comp outer Corp. Power-Edge servers for its job-search

engines, said Jonathan Lynch, a vice president at the Maynard, Mass company

The company also plans to oost server capacity for other functions, such as image-loading, and will partition its Microsoft SQL Server 7.0 database across multiple Dell servers to increase overall sys-

"The investment we are making in hardware should see us through at least for another six months." Lynch said. Fu said he doesn't think the ite, which matches start-up

with investors, will see the kind of transaction-intensive traffic some other sites migh experience, but he added that

Continued from page I

Windows 2K

Windows (see related st Technology, pages 68 and 761. Smith said the highly cenrelized architecture will let him operate the chain with an tion technology staff of 15. The firm will gain additional support from EMC Corp's Data General subsidiary, which is also setting up its data center But the compa-(Business, Nov. 15).

"I had in my past life done sternational IFF deployinternational ments) where I had a separate NT domain structure and often more than one setup in each country around the world," Smith said. "It just made it very difficult to administer. I just couldn't imagine

doing that for 127 stores." The company's WAN will use Sprint Corp's frame-relay service backed up by Integrated Services Digital Network connections at each store. During MCI WorldCom Inc.'s goodness of their hearts, are

bracing for a tidal wave of traffic afte

he isn't taking any chances.

The company is actively evaluating whether it has to on the company generated a ramp up its Web site systems | flurry of hits.

ed users employ redundancy. Analysts said this is particu

brave," said Brian Hume, presi-

dent of Atlanta-based retail

tional Inc. Stores with local

ing transactions even when

they lose their connections to

beadquarters. They can help headquarters catch up later.

Going without an in-store

server was a proven model

when mainframes occupied

the back end, analysts said, but

in this case the back end will

Dan Kusnetzky, an analyst at

International Data Corp. in

HomeLife's aggressive rollout

(see chart) means it will be one

of the biggest early bettors on

Windows 2000. "I think people

are going to be very jubilant that these people, out of the

Framingham, Mass. said

be Windows 2000.

consultancy Martec Inter

servers can continue con

for the Super Bowl, particula

testing [Windows 2000] for frame-relay network outage in August, analysts recommendthe rest of us," Kusnetzky quipped. He said Windows 2000 theoretically can support larly crucial for HomeLife be-Smith's choice, as long as the cause it won't have local netrollout is planned carefully. works in its stores. That's

Smith said be had a back plan of using Windows NT 4.0 if Windows 2000 didn't perform well enough in test but Hume said he could see why Smith would want to bet so heavily on Windows 2000. Smith probably won't have as much money for systems as he does now for a lone time. Hume said.

Selecting a new platform will let Smith have a current infrastructure for longer than he would if be selected what is mature today.

Although other retailers haven't yet settled on Smith's approach as the answer, the difficulty of supporting com-puters in a multitude of stores is a universal struggle in the induetry Dress Barn Inc. in Suffern, N.Y., last week announced that it has selected Eags Minn-based R2 Corp. to ser-

vice the point-of-sale systems in its 689 stores. During the mer, several retailers such as Ames Department Stores Inc. in Rocky Hill, Conn., outreed large chunks of their IT work. According to a survey this

summer by Computer Sci-ences Corp. and Retail Information Systems News, twothirds of retailers are out sourcing some facet of IT. Among them, 26% are out sourcing telecom and networks and 22.5% are outsourcing PC procurement



January 2001 Feb. 17, 2000

t one workstation in each store ws 2000 release date stations in stores to be

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Form Error Reveals Early Y2K Problem

Jurors called for duty Jan. 3, 1900, after change made using noncompliant library

CALL TO 8 non-Y2K-ready programming library was the culpris in a court mailing that ordered about 500 Philadelphians to report for jury duty lan. 3, 1900, according to a city official.

Michael J. McAllister, jury commissioner for the Court of Pleas of Philadelphia County, said he learned of the glitch Nov. 26 when a potential juror

called in to report it.

At first, McAllister thought the peoblem derived from human error. "All I could think was it was a deferral, which is handled manually, and someone entered the wrong date," he said.

Further checks over the weekend traced the problem on an electronic form. Last spring. "we developed and implemented a new form using fully YZK-compliant software," said McAllister. "But sometime alter the end of testing in May, one of the programmers made a change in format using a library that he ddd't notice was not YJK-compliant."

.....

"This is just one of the many nuisances we'll be seeing." pre-dicted Carl Geriner, a year 2000 analyst at Meta Group Inc. in Stamford, Conn. "Everyone's expended all this energy on the big business-critical applications, then something like this slips through."

Despite organizations' best efforts to ensure YZK readiness, 'there's another component that's harder to monitor,'
said Kazimi shikani, a YZK analpyr at Giga Information
Group fac, in Stamford, Conn.
That's the human intervention, postcompliance revealing
issue, which is part of the clean
management issue, 'no said.
The summonses are auto-

The summonses are automatically laser-printed, folded,

noncompliant library

1 was surprise

everyone of
stuffed in envelopes and sealed
for mailing in an off-site opera-

tion that takes 30 mioutes to produce 900 notifications. McAllister said.

'In retrospect, someone should have opened one up and checked it — a process that will take place in the fu-

ture," he said.

City CIO Brian Anderson characterized the glitch as "more of a display problem." His first reaction to the news, he said, "was I hope this is the

biggest [Y2K] problem we have. I mean, it was embarrassing, but it was relatively minor. I was surprised at the reaction — everyone was so tense, as if

they'd been waiting for something to happen."
Anderson said the court's two mainframes and data centers are among those not under his jurisdiction. Neither are information systems of the school district, the housing su-

thority and the city's gas company, he sidd.

Although Anderson has met with representatives from those organizations, the meetings have been "high level," be said. "Based on this incident, we're going to have another conversation with them." 8

GM Strikes \$500 Million Network Deal With AT&T

Global IP network will link design facilities on four continents

LAMES CORE

General Motors Corp. said it has hired AT&T Corp. to replace its legacy networks previously handled by Electronic Data Systems Corp. with a global IP network as part of a \$500 million con-

The deal also calls for AT&T to replace legacy networks at GM spin-off Delphi Automotive Systems Corp. AT&T also will provide worldwide network management across

work management across GM's IT infrastructure. "This whole deal fits together perfectly as a piece of GM's

strategy of globalizing our corporation and as a piece of GM's e-business thrust," said Bob Chsfirn, director of finance and contract management for GM information systems and services. The network will help GM

and Delphi cut costs and reduce design-to-production intervals, said Rick Roscit; president and CEO of AT&T Solutions. The new network will enable GM to "link global design facilities on four contineots, so design work can continue on a 24-hour-per-day basis from center to center as one workday ends and another

begins." Roscitt said.

The new network, to be completed in about a year, will have an ATM backbone and frame-relay access at the edge of the network. It will be capable of handling voice, data and video, although voice over IP intry part of the initial con-

Expansion Likely

Chaffin said EDS — previously owned by GM and split off in 1995 — will continue to handle the major share of the automotive compusy's information technology business. GM speads \$4 hillion annually on IT equipment and services

EDS elected not to bid on the new project but will support it, Roscitt said. The GM/AT&T relationship is likely to grow as a result of

the contract, according to a report by Input, a Vienna, Vabased research firm. Beyond the scope of the present contracts, there is a clear potential for both GM and Delphi to use AT&T Solutions as an application service provider for software that it now runs directly; analyst Albert Nekimken said in the report.

Nekimben also stid GM may see the relationship with AT&T as a step toward extending IP connectivity to its dealing it to the retail level with an e-commerce model like that of Deli Computer Corp. — but such details weren's stated in the contract announcement. §

Car Repair Firm Teams With EDS Online

\$30B market awaits

Electronic Data Systems Corp.
plans to handle the online opcrations for a collision-repair
management firm, First Priority Group Inc., the companies
announced last week. With a
new Web site dedicated to repairing wrecked webliches, the
companies hope to drive the
booming online automotive
services market.

Plano, Texas-based EDS and First Priority Group (FPG) in Plaintriew, NY, will jointly operate www.drivershirled.com. The password-protected Web tie will offer collision-repair management services for car and track owners and their insurance carriers. The two companies plan to start processing insurance claims this month. The collision repair market

will reach \$30 billion this year, EDS and FPG officials estimated. EDS wouldn't disclose the revenue-sharing plan that is and FPG agreed upon. But it did say it plans to develop the Web site and handle the information management systems

while FPG will focus on building relationships with customers and insurance carriers. EDS struck a similar revenue- and cost-sharing relationship with Sow Corpora-

tionship with Sony Corporation of America carlier this year in an agreement that calls for EDS to create and support the waw. metreon.com Web site for Sony's Metreon entertainment

center in San Francisco.

FPG manages collision repairs at participating body
shops on behalf of its corporate
customers, which include IBM
and The Coca-Cola Co. The
body shops pay fees to particinate in FPG's referral service.

id to Agents FPG CEO Barry Siegel said

the online service will initially target insurance carriers, which in turn may grant user privileges to their customers. There are a great deal of de-

tails to consider. like choosing an extended warranty, which requires speaking with a management group and interoching between the consumer and the body shop. It takes time," said Siegel, adding that it can take

disps or weeks to log repairs."
The waw.driverschield.com
size will allow insurance agents
to access qualified repoir facilities for information on hids,
scheduling, repair records and
the like via a Web

surance companies
will be able to schedule repair
work and arrange for loaner vehicles via the Web site next
year. Siegel said.
But automotive industry analyst Art Spinella questions
whether adding middle man-

browser. Customers

of participating in-

austromers, which include IBM and The Coca-Cola Co. The body shorp spy feet to participate in FFG's referral service.

"It doesn't sound long-lived," aid Spinella, a vice president

at CNW Marketing/Research Corp. in Bandon, Ore. "Im not sure consumers want to interact with repair shops this way," he said, adding that they might prefer to let the insurance company deal with the details." Spinella said many insurance carriers, including State Farm

orogany deal with the details."
Spinetla said many insurance carriers, including State Farm Mutual Automobile Insurance Co. in Bloomington, Ill., already offer claim-forms processing, repair scheduling, agent locators and other services online.

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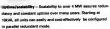
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Emery Beefs Up Online Customer Support

But critic says response time is too long

Emery Worldwide, the Redwood City. Calif-based cargo transportation company, has added new technology to its

Web site to simplify site navigation and provide customers and other users with improved online support.

The system, called eService Portals with SuperFAQs, is based on technology developed at NASA and adapted to the Web by Software9tt Inc. in San Jose. The system should be up and ning within the next couple of days, said Ivo Stibbe, Emery's

director of e-con Customers will be able to access this new function through an eService portal that includes SuperFAQs, which are general by asked (FAQ) that require a bit of consultation before a specific aner is given. Cast click on the FAQs button at Emery's Web site will be engaged

in a short interactive session. The expert search engine then gathers data from the user in order to deliver a tailored answer that is more relevant than the usual question-and-ann help functions. "We wanted to give our customers a simple, fast way to get answers to spe-cific questions," Stibbe said.

able Emery customers to download and save documents, route a-mail incurious to regioned one.

cialists and return to the portal to check on inquiries. The system is also a manage ment tool. *From a managerial standpoint, I can go into the

to respond (to a customer) within three business days," Stibbe said. "This puts us more in touch with our customers. But Bob Chatham, an analyst at Forrester Research Inc. in Cambridge, Mass., said Emery should speed up its three-day response time requirement. "If the standard at compasystem and monitor the staff's nies is to answer the telephone

on the first ring, then this is terrible," Chatham said. "I might forget what my [question] was in three days. The best practices bere would be to have the question answered within four to eight hours, not within days - and that's seven days a week 24 hours a day" he said.

the company will revisit its three out its new program. "Emery is, in fact, clearly ore diligent than the average

Stibbe said that the analyst's criticism was off-base and that day response goal after rolling

corporation in answering e-mails," he said, "Emery's usual response has always been within a few hours, but the Software 911 system allows us to route, track and monitor e-mail inquiries exactly. The fact that we promise in writing to respond in a maximum of three days is added re-

Stibbe also said Emery's FAOs have been developed to provide immediate feedback so that e-mail inquiries are necessary only if the customer requires additional information B

KBkids.com Site Woes Remedied

Toy retailer increases Web, database and caching servers to handle extra traffic

ENVER-BASED BOY retailer KBkids.said last week that it had olved Web site as caused by unprecedented traffic over the Thanks-Starting that Friday, ma

shoppers trying to log on to the site were turned away because the heavy volume of traffic

"It was no surprise that traf-fic was heavier, but the level of traffic was a surprise," said Cecilia Atkinson, the company's vice president of marketing.

KBkids.com had planned to boost the number of servers this month and rushed to install them once the problems were apparent, Atkinson said. The company added more Web, database and caching servers and also increased its search capabilities to handle

customers would have experienced sporadic trouble during that time. "We added servers across the board. I

think everything is pretty much straightened out," she said. "We're disappointed we had to turn away

some customers, but the bulk of toy buying - over 25% hits in December.* Atkinson said the compa was offering \$5 discor coupons to customers who

because Internet delays could

Gomez Advisors in Lincoln, Mass., said part of the rease the site was out over the holiday weekend was that some Inter net service providers couldn't read two coupons KBkids.com causing technical glitches. "The fact that this Web site

was out over this weekend which historically was the biggest online toy shopping weekend ever, doesn't them in harm's way this holiday season," 1 conard said

mers that 'we can't support the numbers of consumers driven to our site."

KBkids.com, a unit of KB Holdings Inc., should have been prepared because of the many new people shopping on line this season, Leonard said. "This will be a learning ex perience for them," she said b Liz Leonard, an analyst at

Webcast, TV Broadcast of Sitcom Run Simultaneously

Technical, business challenges play OK

be surmounting the technology and design challenges of Webcart programming. The next big challenge will be establishing the medium's credi-

y with advertisers. That's what Warner Bros. Online and ABC.com set out to do last month when they hosted the Internet's first simultaprime-time taped sitcom, The Drew Carry Show. The TV show drew 176 million viewers; there were nearly 2 million user visits to the show's Web site and 650,000 live media streams were sent out, according to ABC Inc.

"We expected streams, and we didn't think we could accommodate that num-ber," said Patricia Vance, ABC's Internet Group senior vice president and general manager.
"We delivered a sizable audi-

multaneously on TV and the Web, so that viewers had to have a TV and a PC in the same room to get the full benefit. On TV, Carey installed a Web camers in his home and then went out. The Webcast showed the feed from that camera - including his dog inviting neighbor dogs over for

Because the show was prece corded rather than live, it had to be created with the different media in mind. For example, because of bandwidth concerns, people moved slowly in the Webcast. Set colors were chosen by how they reproduced on the computer screen, to optimize the image for low bandwidth, according to show producer Bruce Helford.

The need to coordinate broadcast action and Webcast

action also shaped the plot of the episode. "Nothing on the Web could be story-involved," affect synchronization, Helford said.

John Kaufr nan, Time War Digital Media's director of technologies, characterized the show's Webcast as a success. "It's proof of the concept that compelling content can be delivered," be said.

On the business side, ABC and Warner Bros. chose two advertisers - Microsoft Corp. a partner in the Webcast, and General Motors Corp. — to run ads during the TV program. They were given banners on

the Web site as well. Helford said the benefit of entising during a dual only show is that during the TV commercials, viewers are less likely to run to the bath-room, because they'll want to keep watching the Webcast.









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IBM

Staples Sues Hacker Over Web Site Incident

BY LINDA ROBENCHAMER

In U.S. District Court in Boston and posted advertisements for Staples Inc., the Framingham, against an unknown hacker competitor Office Depot Inc. dubbed John Doc. who alleged Staples, which operates

Staples, which operates tailer, last week filed a lawsuit | ly broke into a company server | 1,000 office superstores, had | ation to the company's Web

\$7 hillion in sales last year. Its Staples.com Web site recently posted quarterly Internet sales reveoue of \$24 million. Debby Hohler, a Staples spokeswoman, said the alter-

site occurred sometime during the early morning hours of Oct. 9. Security measures implemeoted for the Web site failed to prevent the incident but alerted Staples, she said. Although Hohler said the

change didn't affect a coosumer's e-commerce experieoce - or allow anyone illegal access to consumer credit-card numbers - she acknowledged that for about an hour, some shoppers may have clicked on Office Depot products and been linked to that company's home page. "We don't think our competitor had anything to do with it. We think it was ore of a prank," Hohler said. Gary Schweikhart,

okesman at Office Depot in Delray Beach, Fla., said his company had nothing to do with the alteration and is outraced at what happened. "We're not that dumb to be in-volved," he said. "We doo't condone this type of action." Hohler said Staples has an idea of who the backer is and filed the lawsuit in order to collect information and report him to federal authorities.

E-mail Leads To Dismissals

New York Times fires 23 employees

Twenty-three employees from The New York Times Co. were

fired last week for seeding what the company said was inappropriate e-mail. They were employed at an administrative center in Nor-folk, Va., that processes invoices, payroll and benefits, said Nancy Nielsen, a spokes-woman for the company. Other

loyees received warnings According to The New York Times, the incident involved sternally circulated e-mail." The Yankee Group in Boston,

said he understands why the employees were fired. The core issue is that en ployees are using a company's e-mail system," Robins said.

Online success

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AOL Buys Wireless Text-Entry Firm

a based company that des text-entry software for d major mobile phone mans rs. The move was made to nce ACL's strategy of putting rvices as mabbe devices, the way said just week. The come didn't disclose financial le. Topic will operate an ar

BM to Open Data Warehouse Center

rate overs develop and test scale applications that pull ed to open during the first or of next year, will be bessed l's Non-Undorn Monory

BEA Systems Creates Four New Divisions

SEA Systems Inc. in San Jose said is week: Servers, Integral unto and Services. The

ns in designed to put greater plants an IEA's integration tool professional pervious funitoes durily Knietla, an analyst at It Research loc. to Boston, said entructuring plan makes it or for continuous to understand each of BEA's technology and

o Systems Inc. to Microthal T. Gall., for \$4.5 billion in Area in carl

Informix to Purchase Ardent for \$880M

Open data management tool may give

TITE Informix Corp.'s decision last week to purchase Ardent Software, the company will round out its data warehousing offering and doesn't appear to threaten Ardent's support for

other vendors' databases, according to analysts and users In fact, if it retains the Ardent product's open system architecture, Informix will be the only database wender to offer a data management tool that Informix, based in Menlo Park, Calif., said it will purchase

Ardent for approximately \$880 million via a stock-swap agreement approved by both boards

of directors. Informix is known as a database developer, while Ardent has focused on the data management, or data flow, for data warehousing projects.

DataStage, Ardent's prim tool, is used to extract, transform and load data for creating data warehouses, and it already meshes with Informix's

Henry Morris, an analyst at International Data Corp. in Framingham, Mass., said be sees the acquisition as a untural progression for Informix's

'Ardent has been populating data warehouses," Morris said. database vendor a leg up on competitors "That software will expand from that into managing the flow of information into and out of the data warehouses."

DataStage can be used with any of the major database engines, including those from Oracle Corp., IBM, Informix and Sybase Inc. In fact, both Informix and Sybase are resellers of Ardent's tools. Inrelationships but balance them with a move to optimize the tool to work with Informix's

database, Morris said. One Ardent user with an Oracle database said be wasn't concerned

"What I was initially wor. ried about was, are they going to turn it into an Informix-only

(Internet service provider) they use, and we have the ability to communicate with these cus-

tomers," said Dukker. However, analysts point out that eMachines must still prove it can't turn a profit on hard it can turn a profit (see chart). ware sales alone, said Schelley The company faces litigation from Company Computer Corp., Olhava, an analyst at International Data Corp. in Mountain which is charging that eMa-View, Calif. However, "they've chines infringed on Compaq been around now for a year, which I think surprised a lot of patents covering key parts of PC design. There's also litigapeople," Olhava said. 9

Sybase to Buy Internet Firm

BY MARY LIBBETH D'AMICH Software firm Sybase Inc. last week agreed to acquire Home Financial Network Inc. (HFN), an Internet financial services company based in Westport. Conn. It plans to merge HFN with its own software server unit, creating a new electronic financial services company

Emeryville, Calif-based Sybase will acquire privately held HFN for a combination of cash and shares of stock, Sybase said. The number of Sybase shares to be given to the own-

product, but they seem very strongly to be emphasizing that they're continuing supporting the other database vendors," said Jack Garzella, director of core systems engi neering at MatchLogic Inc. in Westminster Colo

"They'll obviously put spe ciplized books into it for Informix, but not at the expense of some other database platform," Garzella added. Ardent has said that most of its cusomers don't use the Info database

The acquisition puts Informix in an envision position said Doug Laney, an analyst at Stamford, Conn-based Meta Group Inc. It "will take Sybase out of the back-end data warehouse game altogether and at the same time leapfroe Oracle's expected [extraction. transformation and loading offering," Laney said.

If it didn't acquire Ardent, Informix would remain "in the camp with Microsoft, Oracle and IBM, which are only able to target their own databases," Laney said.

tion from Apple Computer Inc. over the resemblance between eMachine's eOne computer and the iMac EMachines has shown that

ers of HFN is based on an agreed evaluation of the privately held company of \$130 million. Sybase has also agreed to provide the new company with \$25 million in additional

capital and assets The new subsidiary will offer products and services for financial institutions and companies that want to deliver financial services over the Web. Sybase said. It will also supply software for business to-business and business-to consumer applications. HFN specializes in helping

companies develop Web sites for offering financial services to their customers.

D'Amico writes for the IDG News Service in Munich

EMachines Buys Free-PC, Seeks New Revenue Source

Analysts: Company must still turn profit

In search of new after-sale revenue streams, bargain PC vendor eMachines Inc. in Irvine, Calif., has acquired Free-PC Inc. in Pasadena, Calif. Free-PC offered users PCs and Internet access free of charge in return for a stream of ertising displayed on their desktops. The company didn't find enough sponsors to make this model work, even though it had 30,000 users. EMachines said it would discontinue the practice, but it will build on Free-PC's advertising deals. EMachines, which offers PCs

priced between \$399 and \$899. debuted last year to become the fourth-largest consumer PC vendor in this year's third quarter. The company has filed for an initial public offering (IPO), but the acquisition will store region rush the IPO back to the first accretor to the

arter of next year, said elv chines CEO Stephen Dukker. EMachines will offer Windows desktop icons and

function keys on the keyboard that lead straight to an advertiser's Web site. The system will also come with a dash boardlike desktop tool that displays banner ads white helping users navigate the Internet. "What we are doing here is basically creating a network of PCs, independent of which

JUST THE FACTS All About

EMachines # Founded in September 1996 with fund Computer Inc. and monitor maker Korea

WFor the tax months ending Sept. 18, eMachines lost \$3.9 million on revenue of \$350 million

at in Q3 1999, ablactures was the No. 4 consumer PC wooder, with 10 Pile market share, roung from O'le the year before.



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MARYERAN IOHNSON

Courage, IT-style

T WAS BOTH an amazing story and an unfortunately commonplace one. It was an IT project gone horribly wrong: months behind schedule and saddled with the wrong technology. The IT team was demoralized by mounting failure, and the business people were shaking their heads in frustration.

The amazing part was CIO Rob Norris' complete and open willingpess to share all the gory details of "The Project From Hell" [Business, Nov. 22] with our reporter

Kathleen Melymuka. Norris wasn't even a new C1O called in to handle a leftover disaster from his predecessor. He was the guy taking responsibility for making mistakes, for succumbing to "the lure of new technology" to replace a poorly functioning PCbased claims payment system. The story of how this CIO diagnosed his own project's ills, leveled with his CEO about the real problems and then

turned it all around and survived to tell the tale made for gripping reading. One programmer who wrote to us last week said Norris' piercing look into the camera spoke such volumes about what it feels like to stare into an IT project abyss. "Rob managed to visually express a couple of different emotions and one very big attitude that I identified with immediately," wrote

a CIO stand in the spotlight of a national forum and admit to

how rare." Maybe not so rare, really. The tremendous pace of change in today's technology environment means an equally tremendous risk

of failure. Yet our pages have been filled in recent weeks with stories from people in the IT community willing to talk about their hard-won lessons in managing thorny ERP installations or perilous e-commerce initiatives. We are grateful to Rob Norris, and all the CIOs and IT leaders like him, for their willingness to share these experiences with

our readers Consider this column a virtual round of applause for your courage under high-tech



honesty. And in my experience,

call (877) IDC-Y2KK). We have come up with We expect the world's

economy to lose \$24 biltion next year as a result of Y2K downtime, which is less than 10% of what we've spens on Y2K remediation since 1995. This

is less than 0.02% of year 2000 business revenues. Only Russia will lose more than 0.05% The reasons the global impact will be so slight

relate to how bad the problem is in the first place, the degree of work to fix the problem and how vulnerable the economy is to computer downtime. This last item is one reason some of the least-prepared countries will also be the least affected. The scenario also assumes that while only 75% of Y2K projects will be complete by New Year's Day the unfinished work is mostly on secondary systems. Mission-critical work, for the most part, has already been attended to.

How quickly the problems that do arise get fixed will also affect how much Y2K hurts. Having received a third of the results of a 12,000company, 15-country survey, it looks like about 40% will have IT staff on hand at midnight twice that at medium-size and large companies. The most common precaution will be arrangements for backup power generation and phone

There will he some hot spots. Countries like Russia, China, Korea, Taiwan and Vietnam will feel the most impact - either because remediation has lagged or because their economies are relatively automated. By the same token, coun-



IOHN GANTZ How much will the Y2K rollover hurt? Not a lot

2K. YAWN. Among CIOs and IT shops, Y2K is yesterday's news. But the New Year's cutover will occur in less than a month. What's really going to happen? You gotta wonder.

With my colleagues here at IDC, I'm involved in a project to determine just that. We call it Project Magellan, Using primary research and economic statistics, we have come up with a scenario for bow badly Y2K will hit 52 countries. We'll have analysts calling in at midnight from around the globe to let us know if our forecasts are right (for more information, visit www.idc.com/mageilan, or over New Year's weekend,

three basic scenarios of the impact - measured as business revenues perma nently lost to computer downtime - of Y2K date related computer glitches. So how much will it hurt? Not much

tries as dissimilar as Egypt, Sweden and Venezuela won't feel much impact. Although it's most prepared, the financial industry, which includes brokerages, will feel the most heat from Y2K because it has so many company-to-company inter-

Of course, the end-of-civilization-as-we-knowit crowd could be right. When we asked CIOs and IT managers in our global survey whether there would be widespread "disasters" - meaning serious outages lasting days - 14% said ves. Better lay in some extra bubbly just in case.

DAVID MOSCHELLA

Breaking up Microsoft won't break monopoly

THE APPOINTMENT OF Judge Richard Posner as mediator between Microsoft and the Department of Justice comes as good news. After being stung by Judge Thomas Penfield Jackson's harsh opinion, Microsoft now has a buge incentive to settle this case before the current findings of fact become entrenched as findings of law. And by all accounts. Posner appears to be almost the ideal person to help rein in any grandiose visions the DOI might have.

If nothing else, the possibility of a settlement has. at least temporarily: stemmed what was a rising interest in breaking up Microsoft. This alone is a blessing. The belief that a breakup is the answer reminds me of that old saw about the generals always trying to relight the last war. Just because a particular remedy made sense for Standard Oil and AT&T

mark with Microsoft The cases are more different than they are alike. Consider the fact that both Standard Oil and AT&T grew up as vertically integrated operations, John D. Rockefeller dominated both the re fining and the distribution of oil. Similarly, AT&T controlled the U.S. market for telephone equipment, as well as local and long-distance services In these cases, divestiture made sense. Dividing up the physical assets proved relatively straightforward, and both companies' monopoly power

In order for Microsoft's position to be analogous to these frequently cited predecessors, it would also have to dominate either computer hardware or services, or at least most other forms

was dramatically reduced.

of software. Instead, other than its PC operating systems. Microsoft really has only one other nearmonopoly with its desktop productivity applications. And a careful reading of history shows that this position is only partially due to Microsoft's operating-system strength.

More important, the most frequently proposed plan - breaking up Microsoft into separate operating systems, applications and Internet business companies - would do almost nothing to eliminate either monopoly. Whereas the breakups of both AT&T and Standard Oil created important new telephone and oil companies, breaking up Microsoft wouldn't create any new operating system or office software competition. Additionally, because applications and online services are rapidly converging, separating them now would

demonstrate a distinct lack of vision And not that today's divestiture advocates have actually bothered to ask, but a breakup would probably work against the interests of many of Mi crosoft's business customers. Any new applicarions company would almost have to include both Exchange and Microsoft's whole Back Office

repertoire. Yet clearly many customers would prefer that these mission-critical applications and Windows NT remain the responsibility of a single organization

Fortunately, settlement discussions are much more likely to specifically focus on curbing Microsoft's operating-system power. Here, the range of remedies continues to include any or all of the following: (1) requiring consistent and nondiscriminatory operating-system pricing, (2) forbidding operating-system sales to be tied to the purchase or use of other Microsoft products. (3) demanding that Microsoft make public its source code and (4) assuring that Microsoft's customers retain full

"first o'reen" flexibility and similar options. these important behavioral changes. Indeed, it would actually make real change much less likely because the whole point of a one-time breakup is to eliminate the need for detailed government interventions. But such skilled interventions are precisely what's needed. Divestitures are exciting and have worked in the past, but it's nuw clearly

READERS' LETTERS

FRI hasn't outlived its usefulness

tions are usually quite lays an egg, it is a big. one. In his Oct. 25 col umn [*Bring Out the Dead! The IT Zombies Among Us," News Opinion l. he makes two

). Intel has a significant embedded system pres ence. Granted, oone are in the PC replacemen arena, but I find it difficult to believe that a company as nimble as Intel could not modify some thing to suit the market.

2. For the past 10 years. number have told of the death of EDI. They are wrong not because the technology is not there; it is. They are wrong because the business and legal angles are not resolved. EDI is a protocol legal documents. These documents can be es forced and make EDI transmissions binding

The protocol is welldefined (maybe over defined) and allows for testing and a wide variety FDI will not die until die ital signatures are unive

better way exists than en-

SAP, IBM were key to Lockheed's success CEVERAL statements

Users' Plans" [Page One. Nov. 15] demand clarification. The article accu rately describes the depth of planning behind Lockhood Marrin's FRP project, but it omits several of my statements regarding the relationship we have with our consul-

the wrone way to go.

tants The article suggest that Lockheed Martin has been dissatisfied with the competence of many of its IBM consultants. This could not be

further from the truth In early success to IBM, and we could not have come as far as we have without ies strategic and technical contributions. The per connel changes that I described are not unusua during a long-term SAP implementation, Consul. tants, like Lockheed Martin employees, have re tated in and out as new challenges and issues

> The article's other omission involves the fit between our company's business needs and

attributed to me in article suggests that the ERP Flops Point to SAP software custo tion required by Lockheed Martin threatened the success of the proj ect. Anyone who understands ERP projects knows that adjusting the chosen software is part of any implementation Indeed, SAP has shown chemificant commitme to the aerospace and defense industry by addressing our specific re

SAP's R/3 software. The

quirements through soft ware upgrades. SAP. like IBM, has proved to be an able. Bexible and critical partner in our ERP im-Marty Phillips Vice president, ERP

Lockheed Martin Amonautical Systems

COMPUTERWORLD welcom comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Allen E. Alter, columns editor, Computerworld, PO Box 9171. 500 Old Connecticut Path Frammonhum Mass (1970) Fax (506) 875-8931; Internet letters/computerworld.com in clude an address and phone number for immediate verifical

OHN GANTE'S predicsally accepted and until a

terine a document into a computer multiple times is resolved. Aima J. Wetzker

Golgen Valley Menn THE ESSENCE OF EDI is to integrate the husiness applacations of different

enterprises. It encompasses not only traditional EDI such as ANSI X12 and UN/EDIFACT. but also emerging ap proaches such as OO-edi and XML/EDL for which standards are still being developed. Sure, Web-based pro-

curement is great. But procurement is only one of the hundreds of activities that EDI supports. And more to the point, if you routinely exchange large volumes of data with another enterprise would you rather send it by EDI or rekey it into Web pages? Even a zom bie should be able to anver that question

ael C. Rewlins Owner/principal consultan ins EDI Consulting Dobuston Issuer inslimetronet com

BILL LABERIS

IT Century MVPs: Five leaders who made a difference

PUT ASIDE all those other "century's greatest" lists you've been reading. This one's real good and relevant. I present my take on this century's five most important people to the world of IT.

Store John No. be and Apple didn't invent the graphical user interface. He did make a computer system that delivered that interface in an affordable package to the masses, thereby giving rise to popular computing for the masses. His Macinton's spurred Microsoft to be as good as it could be: without Apple, where was Microsoft's competitional or the state of the state

tion for the desktop? Most important, Jobs, with his rebirthed Apple and iMac, continues to represent inmovation, imagination and pioneering brass. In this regard, while not the rich-



IBM and its hundreds of thousands of employees to THINK, reminding them to do so by plastering those letters all over the company. Under Waston, IBM developed a customer-first, enterprise account strategy that enabled the company to anticipate needs rather than simply react to them. He made IT synonymous with corporate success in the bearts and minds of non-IT executives. Along the ways, be created the first and still most endur-

ing computer company toos.

Base library library. More than anyone else, the last Hopper taught computers to talk business, with her birthing in 1979 of Code 1 common business oriented language. Code's remarked to the common business oriented language. Code's remarked to the common language code in the common language code in the common language code in the common language computers that demanded engineers to make it work. But make was a was migroveneers over endier computer in the common language common

corporate computing.

Blat Napur. No relation to Grace, except by his influence on your environment. Hopper took the tools provided by Watson, Grace Hopper and others and fashioned a strategy at American Airlines that has stood for nearly 20 years.

The development of the Sahre reservation system at American Airlines remains the textbook case study of how information is used as a strategic corporate weapon. It was primarily Sabre, not just the service of transporting people and cargo, that catapulted the airline to world leadership in

its industry.

I also credit Hopper with popularizing, if not inventing, the concept of the CIO by his actions and deeds.

So that's my list. Did I leave off any of your favorites?

IIM McCANN

Are Web portals a dying breed? Not on your life!

OMEONE CONFIDED in me recently that Web portals are dead. I said to this person, "If that's the case, then perhaps I'd better

send some flowers."
Reporters, pundits,
savvy Net surfers and
day traders are all
predicting the demise
of portals — sites that
serve as hubs or gateways to the Internet.

Fm telling you, friends, it ain't gonna happen. Take it from an e-commerce pioneer: The concept of

a portal to the Internet is here to stay, 'ma a suant's importer of the portal idea. When it comes to aggregating content, eyeballs and revenue stream, few can do it better. My company, 1400-Flowers.com in Westbury, NY, singed its first portal deal with Compuserve in 1902, before it was fashionable to be a portal. Since then, we've signed deals with AOL MSN. Excites, Snap and several other portals, and we have always re-calitated when we've had the chance. The reason is simple: You've gotta be in it to win. According to Media Metrix Inc., the leader in Internet and digital media measurement, seven of the top 10 most heavily trafficked Web properties are portals whose number of unique monthly visitors has been growing consistenty—not shrinking.

But what about these pundits who are reveiling in the portial's demised. They make a good argument, but how can they lie so nutre? The connerse in the portial sediment of the portion of

neares outstang each one instead.

In the control of the control o

content and commerce.

Are portal deals expensive? Generally speaking, yes. Do portals provide a significant return on investment? Yes again — in the long run.

If a company signs a one-year portal deal solely

to increase sales, then it's selling both itself and its partner abort, For one thing, it can sometimes take years before a company perfects its portal marketing strategy. But in the measurism, the company is strengthening its brand presence, equiing customers, collecting valuable research or demographic information and, in most cases, the contract of the contract of the contract of the benefits. This is itself is almost worth paying promises marketing the contract of the contract of the promises are sellent to the contract of the contract of the promises are sellent to the contract of the contract of the promises are sellent to the contract of the contract of the promises are sellent to the contract of the contract of the promises are sellent to the contract of the promises are sellent to the contract of the contr

Is signing with a portal the right move for every company? Not necessarily — Homani and the online community Tripod have proved the power of word-of-moint. Viril's marketing on the laternet — so much so that they were bought by portals themselves. Other companies but an incredible presence by being first-to-market in their particurate categories such a Amazon. can or 2 flyst. Total Amazon, which is trying to position itself as absoncting portal, in also a major portule articus.

istedf. Again., you've gotts be in it to win it.

The bottom line is that if a company is going to
invest its precious capital in a portal deal, then it
had better be in it for the long haul. My advice is
to survey the terrain, stake your claim and start
digging the trenches. Contrary to the buzz on the
street, portals do provide a high return on investment and numerous other benefits that can—
over time— office the initial cost.

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protect your systems, from the centralized computer room to remote site applications.



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As our readers' thoughts turn to Windows 2000 so, too, do we Our webzine is now Windows 2000 Advantage (formerly Windows NT Advantage) And to keep pace with our reader community, we're offering a full slate of case studies, feature stories, Q&As with top Compaq and Microsoft executives, user perspectives. Windows 2000 analyses from our columnsts and "Closer Looks" that focus on installation and migration issues.

Online This Week

Compag introduces new iPag Internet Device

With the introduction of Compaq's new legacy-free iPaq Internet Device, Windows 2000 users will be getting a ated, top-of-the-line Internet comp designed to take full advantage of the rehability, manability, security and ease of internet access features of Windows 2000 Professional

IT moves beyond Y2K

The abbreviation Y2K has dominated the vocabulary and budgets of corporate IT departments for so long now that many organizations may find it strange to start thinking beyond 2000. But with the rollover date a month away, post-Y2K plans are now part of the immediate rather than long-term future. And analysts say there's plenty to keep IT departments busy

PC certification tests offer users peace of mind

Hamburg Mannheimer, the second-largest life and accident insurance company in Germany, didn't want to take any risks while rolling out new taptops to its employe So the Hamburg-based firm enrolled in Compaq's PC Certification Testing Service part of Compag's PC Life-



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Microsoft^{*} COMPAG

Windows 2000

The ins and outs of Active Directory Service



By Shan L. Jones

New technology features present obvious benefits to end users, but along with the benefits come challenges as well. Microsoft's Active Directory Service (ADS), which is new to Windows 2000, offers multiple new features that make network administrators, software developers and software vendors more efficient. However, certain ADS functionality should be examined closely to ensure your organization can realize its full notential.

Active Directory Service is a directory service within Windows 2000 that stores network information that can be gueried efficiently and enables distributed security and distributed administration. Through Active Directory Service Interfaces (ADSI) -- a set of COM programming interfaces - ADS provides several standard interfaces for open synchronization and application integration, thus ensuring interoperability of Windows environments with numerous devices, applications and other directory services, including Novell Directory Services.

This directory senice provides distributed applications such as Infranet applications with the features they need to lower the total cost of ownership. A directory service like ADS is part of a distributed computing environment, providing a way to locate and identify the users and succes available to the auctem. This has been one of the challenges of large distributed computing environments identrlying and locating resources such as users groups, printers and print queues and documents. With a directory service. when a name is given for a resource if provides the information necessary to

Most enterprises have many different directiones, such as network operating systems, e-mail systems and groupware each with its own directories. Issues arese when a supply enterprise deploys multiple directories including usablity development posts and support costs.

Who Uses ADS? Network administrators use AOS to automate common arimonistrative tasks such as adding users and

groups, managing printers and setting permissions on network resources. AOS. through its programming intertace AOSI makes a easier for indepenylent software vendors to build anniestors that register with access and manage multiple directory services count is smalle set of interfaces. Soft ASOI to make their products and applicolons directors-enabled or more specifically AOS-enabled Services publish themselves in a directory while clients use the directory to find the services, and both can use the directo ry to find and manipulate other objects of interest &

To read more about AOS, yest

ADVANTAGE

DATELINE: WINDOWS 2000

By Laura DiDio

Windows 2000 riches await smart migrators

"It" is almost here.

The "it" is Microsoft's Windows 2000, arguably one of the most anticipated productions since David O. Setznick brought Gone

with the Wind to the big screen.
It is big — in more ways than one. When a ships Feb 17 (with the exception of the high-end Data Center) it will weigh in all an estimated 35 mellion lines of code — surpaisancy the code base of even IBMs MYS mariframe operating system. All that code brigs with it a siew of advenced features. Now that we all howe when it's coming.

the real question is when to migrate.

Deciding to migrate immediately to a new operating system or delay the upgrade until the new product has proven

tself, is always a tricky issue. Never more so than now when faced with a new offering of the scope and complexity of Windows 2000.

The promise of both the Windows 2000. Professional and Server products is greatly

owes 2000. The promise of both the Windows 2000. The promise of both the Windows 2000. Professional and Server products is greatly improved quality performance and reliability. But make no mistake. They are two separate and datinct entities A successful implementation will depend on two things Microsoft delivering a high-quality 1 of release and compositions dedicating the professes and compositions dedicating the services.

necessary monetary and training resources to the deployment. Based on frishhand testing and reports from many beta betters. Windows 2000 Professional should be many to deploy and professional should be many professional should be professional should be professional should be professional should be an extensive should and reliability. During an extensive sights and colorated should be also stating cycle. Microsoft is in-house Quality Assumance tham deferred and the reliability and the should be applied to the should

sonal and Server platforms. For the best results, deploy Windows 2000 Professional on never hardware. Sprove the recommended minimum hardware requirements and install it on a Portuni III outflied with 98th Mysis of PRAM and a 40-type hard drive. This configuration is externedly double Companies are well-softward for the property of the configuration of the property of the propert

To read the full text of this story, west



A successful implementation will depend on Microsoft delivering a high-quality 1.0 release and corporations dedicating the

necessary monetary and training resources to the deployment. The Web Magazine for IT Leaders Implementing Windows NT and Windows 2000 with Compag Services and Solutions



Browser-based approach smooths PC manageability

By Bruce Hoard The rapid growth of corporate computing networks has created a criass of manageability. Compaq has responded

ss of manageability.
Compaq has responded to that onsis by offering intelligent Manageability a built-in capability that enables users of its Destyro, Professional Workstation and Armada portable PCs to easily end effectively manage than pubma professional forces.

their network devices via the click of a browser Depending on user requirements, Intelligent Manageability features

can be used to remotely access, test and proactively troubleshoot faulty network PCs before they fail. This eleminates costby downtime and drastically reduces the need for remote service calls. The engine behind

this dynamic concept is a Viele agent found in Compact PCs that lets the user view and manage one PC at a time. On a basic level, this agent makes it possible to system administrations to pore it along worked PC clear and view its characteristics without the assistance is an intervening management console. Because the Web agent is suppoped with an HTMI.

front end, if provides a user-friendly view of the

PC All information is sorted, color-coded and displayed in a scrolling roster that appears on the left side of the monitor. One cilck on any item creates a list of its assists on a larger pane on the right side of the monitor. Other PC vendors require a console in

order to perform this task using a standard Web browser.
According to Ed Reynolds, director of solutions marketing for Compag's desktop PC division, the browser-

based too's eate of use creates a competitive advantage for Compaq. "A lot of medium and small busnesses, as well as departments in larger companies, don't want to wrestle with a bunch of tools."

"We pre-install the Web agent in the factory on the end user gets this powerful capability right out of the box. You put point your browser at a PC and see real-time health and status wiformetion," he says. "You don't have to be an experienced system.

administrator to get value from this tool." 9 To read the full text of this story, visit www.Windows2000-

www.Windows2000Advantage.com



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PAY UP

A start-up called eTime Capital is trying to make it easier to get corporate customers to pay bills. By tracking sales from order to delivery and confirming receipt at each step, eTime predicts it can reduce collection costs from between \$14 and \$162 per transaction to about \$2 cach. > 41

MAKING DRUGS

Using sophisticated modeling and data analysis software Bristol-Myers Squibb hopes to accelerate the ess of finding viable drugs by weeding out weak candidates early. It's trying to reduce the roughly \$500 million and 15 years it can take to get a single medica-tion from the lab to the patient + 42

ANIMAL RIGHTS

Procter & Gamble has reduced animal testing by 80% using data mining and modeling tools to predict the safety of the chemicals in its consumer products. The decrease has earned the company some respect from animal-rights activists. • 44

SWAT HIRING First Credit Card Ser-

vices was spun off in 1998 along with 148 em ployees, which meant starting over with way too few staffers. The start-up managed to fill 111 jobs the first year and 173 the second using a combination of Internet s, outside recruiters and a SWAT hiring mentality. . 46

Y2K REMEDIES

Y2K is less than a m away, but it's not too late to catch problems you might have missed. Here are 10 last-minute tips. You might want to commission an independent audit or get a legal team to review Y2K laws. And you should determine how to recover lost data if you have to resort to manual product distrib-ution. 1 54

MOTIVATE STAFF

Stuck in an area no renowned for high tech Eli Lilly project manager Ketty Brown motivates people by pressing them to understand what they really want to do, and trying to morph their iobs into something more satisfying to th and the company. • 56

MARKET CAP

Earnings and stock price used to be linked. When profits rose, the stock usually rose with them The Internet changed all that. Investors now look primarily at a company's Earnings growth potential rather than its his rv. See QuickStudy. > 50

BETTER SERVICE

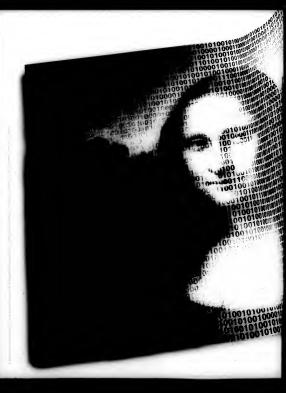
ing a vendor's se vice up to expectations is tough, Joe Auer admits. Offering special incentives and an edge on new contracts to top performers can keep them on the straight and narrow, he says. # 60

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Year 2000	54

E-COMMERCE DIRECTORS

A NEW TITLE is popping up in e-commerce groups: director of e-commerce technology. This title is bestowed on people with business savvy and technical foresight. Donald Foy (pictured above), who runs Manheim Auction's site, the world's largest used-car

reseller, is one of those at the forefront of the e-commerce world. He and others in this unique role tell who they are and how they got there.



SURE A PICTURE'S WORTH A THOUSAND WORDS. BUT DO YOU KNOW HOW MANY GIGABYTES IT TAKES UP?

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COMERCE INISYS INTAL COMPAG DELL

ETime Follows the Money

Start-up's service aims to help reduce collection costs by tracking accounts

BY MILES NING IKE MOST finance executives, Gary Darst knows precisely how to improve his company's cash position - stall payments to suppliers by laying on the blarney.

"All of us finance guys are trained very early on that whoever has the cash is king." Darst explained. 'And the only thing we have leverage over is paying our suppliers. We can't mess around with payroll or bank loans because that'll mess

Now a start-up called eTime Capital Inc. sims to make delaying payments harder by verifying whether sob stories about delayed or incomplete shipments are true.

Founded by Rohan Champi-

strategist at Federal Express Corp., eTime's goal is to shorton the time it takes to collect accounts receivables, which can add up to billions of dollars in a single month at large firms. Champion's strategy: Follow

the money - in real time - by tracking and reconciling all the data that goes along with things like business-to-business purchase orders, transportation manifests, split shipments. bills of lading and on-dock delivery and acceptance confirmations. Champion predicts that his company can reduce collection costs from the current National Association of Purchasing Managers figure of

\$14 to \$162 per transaction to about \$2 each. He also bopes to collapse collection times from today's average of 30 to 60 days on, the former chief business to real time.

As it collects the data, eTime will feed it to financial executives, who can literally see their exact cash positions at

At \$80 million Litton Electron Devices, a beta site for eTime's new Internet-based service, that visibility could translate into yearly savings of up to \$240,000 said Darst, the firm's director of financial

That's the amount the San Francisco-based components manufacturer would save on interest it now pays to borrow against annual receivables of about \$10 million to \$12 million. Now, the average time it takes Litton to collect accounts

is shout 60 days "If I can bring that down to 30 days, I could drop [receivables] to \$6 million to \$8 mil-Hone which remelator into up to \$30,000

monthly savings in interest of "I'm also a big believer that I could get a better interest rate

with all of the information eTime provides," Darst said. But these benefits don't come cheaply. The one-time setup fee for eTime to link a ny's systems to its network and data center in Sunnyvale, Calif., is about \$600,000, which could prove daunting for all but the largest compa-

"It would depend on how much a company could save in collection and interest costs) to offset the setup charges," said Beth Gold-Bernstein, an analyst at Hurwitz

Consulting Group in Framingham Mass ETime is scheduled to go live with its service during the first quarter of next year. Other companies evaluating the service are Minneapolis

based Sarcom Holdings, which operates an online vertical portal for buyers and sellers in the high-technology industry, and Owens Corning in Toledo, Ohio.

d sends finance execu-

"The business proposition is very compelling," said Steven Strobel, vice president and controller at Owens Corning We're curious and interested enough in it to devote serious un-front time to delve into it." But for now, Strobel added,

Owens Corning remains entrenched in an SAP AG implementation, which won't be finished until lune.

6M Driven to Improve Outsourcing Deals

Competition pushes slow shift from EDS to other vendors

Before Electronic Data Systems Corn, was soun off from General Motors Co. in 1996, the two companies hammered out a new master outsourcine agreement that would allow GM to bid out a small percent-age of its information technology support functions to other third-party vendors on an annualized basis. Under the ement, Plano, Texasbased EDS would continue to handle the lion's share of GM's IT functions through 2006. Since then, Detroit-bas

GM has been sampling a variety of service providers and shifting the majority of the \$200 ion in annual contracts that are up for grabs to vendors ding EDS, which is roid roughly \$4 billion each year to ovide IT support to GM.

ced" to vendors other than FDS, said Bob Chaffin.

director of finance for GM's information systems group in Detroit. GM is expected to gradually shift more and more of its IT services business away from EDS to other sys tems integrators both during and after its 10year, \$40 billion outsourcing agreement ex-

pires in 2006. acquiring more competitive arrangements," while EDS "has been anxious to diversify said Albert Nekimken, an analyst at Input in Reston, Va. GM has been "ve satisfied" with its at ity to bid out \$200 milon worth of IT sup-

"I would say the preponder-ance in the contracts that have Chaffin. That's because GM been bid out] has or will be re- has lowered its costs and received improved support -



that is, faster, better quality under the new deals, he said. In some instances, EDS won some new deals because it best met those requirements, said Chaffin. They include an IT support deal EDS won from GM's OnStar Navigational Unit

> From 2001 through the contract's end in 2006, the figure drops to about \$75 million worth of annual contracts that can be re-outsourced, Chaffin said

iding Stendy

On the surface. ight look like EDS is sing its grip on the her of all outsour ing deals to its rivals. But before GM and EDS urcing contract in 1995, EDS's profit mar-gins from GM-related sess "were probably in the 11%-to-12% range. said Russell Price, an analvat at Olde Equity Research in Detroit. Since then, the margins have become closer to an 8%-

to-9% range, Price said.

Some of the deals that GM has struck since 1998 include a multiyear contract awarded to Bethesda, Md.-based Lockheed Martin Corp. in last April to support the warehousing systems for GM's North Amer ican parts division. And prior to GM selling off its backoffice financial operations to Chicsen-based Arthur Andersen & Co. two weeks ago [News. Nov. 29], the auto giant outsourced IT support of those functions to Lockheed

Martin as well. Last week GM handed AT&T Corp. a five-year, \$350 million contract to design. build and manage a new IP network that will link its 1,100 worldwide locations in more than 40 countries. AT&T will also manage GM's wide-area network and provide dom and long-distance voice, data and video services.

At the time of the EDS spin-off in 1996. Chaffin told the press that "there's nothing like the marketplace to drive competitive performance." The \$400 million that GM claims to have saved in outsourcis costs since then confirms that be added.

Software Helps Speed Drug Development

More sophisticated analysis tools help companies save time, money

RESTOL MYERS Souibb Co. is using more sophisticated software for mathematical modeling and data analysis to help staffers find commercially viable drugs faster.

The graphical tool allows for more rapid custom model de-

do before. The typical pharmaceutical company spends \$500 million over 15 years, on average, to get one new medicine from the lab into patients' hands, according to the Pharmaceutical Re-

ington-based lobbying organization. So

any time-shaving of development process can mean significant cost sayings and greater effi-

"When you're in the discovery phase, you are looking to find the best lead compounds to take into the clinic, and e the sooner you do that, the sooner you



have a commercially viable

find out whether you might | age data more effectively. In the past, staffers collected product," said Duniel Salazar, and stored results in their own

ory and experimental medicine at Bristol-Myers Souibb. Bristol-Myers Squibb has been using InnaPhase Corp.'s Kinetica analysis tools through all phases of develop-

ment to perform the mathematical and statistical analysis of data on how the body absorbs and metabolizes drues (charmacokinetic data), as well as their effect on the body (pharmacodynamic data).

Next year, the company plans to roll out a more extensive InnaPhase system that will help it man-

to consolidate for more sophis-ticated analysis and decision The InnaPhase system pro-

vides a centralized Oracle Corp. database along with tools to import and export data. The package includes components to publish information to a company intranet and produce the technical reports that regulatory agencies

Steven Shaha, an analyst at Stamford, Conn.-based Gart-ner Group Inc.'s bealth care research and advisory service, said the emergence of more sophisticated software to model and analyze pharmacodynamic more quickly is an "important breakthrough," so companies

can reduce their reliance on

[Don't spend timel inventing

something someone has already invented.

STEVEN SHAHA

brilliant scientists and trial-But Shaha cautioned that companies should use the software in connection with intellectual property asset manage ment systems so they don't waste resources "inventing

something someone has al ready invented."

KEVIN FOGARTY/BRICKS AND CLICKS

Threat of e-retailing is overstated — for now

SIT TIME to end the myth that retailers (and almost anyone else) who don't already have hot e-commerce sites up are dead? Really, I hear this all the time: "The pure plays are so far ahead of the brick-and-mortar players that traditional retailers don't have a chance to catch up. Amazon.com is the wave of the future, and laggards are dinosaurs that no one will even bother to dig up in a few years."

True, a lot of traditional . Americans will spend up to retailers lag the dot-coms online. But the reason they don't throw the kinds of resources at their sites that dot-coms do is that they're focusing on the market that actually makes them money - people in the

A study by Deloitte & Touche and the National Retail Federation predicts that | can get to a customer is

\$185 billion during the holidays - but only around \$12 billion to \$15 billion of that will be spent online. That's worth ramping up

your online operation, but not if you have to spend your whole IT budget to do it. Dot-coms have to put all their resources into their sites - the only way they

through a router.

But for brick-and-mortars. it may be smarter to let the dot-coms bleed venture capital in pursuit of a trickle of revenue than it is to confront Look at the all

powerful retail force at Wal-Mart which has retreated from its online assault for the season, figuring it's better to lose a few potential sales online than to risk a

very public failure But you can bet that the site it plans to launch early next year will be a Death Star

that takes full advantage of

tics, distribution and supplition the advantage of having a place where cus-

tomers can touch items before buying or return items without a trip to the post office. With that finetuned engine behind it, the site

only has to be medium-cool to deliver everything its loval bend of consumers want decent products at

decent prices. On the other hand. Toys R Us, which was evil-empired out of its No. I spot in the toy market by

Wal-Mart last year, contin-ues to beat its head against the online wall. The latest iteration of its e-commerce site is as mildly unsuccessful as the others. E-commerceoriented ad campaigns

drove so many people to the site that the company had to put limits on visitors to keep it from crashing, despite quadrupling its servers. But even considering the

\$132 million it lost in fiscal 1999, no one expects Toys R Us to go away. It brought in \$11 billion overall last year. It also has one of the most recognized brand names in America and just posted its best quarterly increase in 10 years. Betting on its sur-vival, most Wall Street analysts rate it a Ruy or better.

But even if Toys R Us does get whacked somehow, Wal-Mart, not e Toys, is more likely to pull the trigger. It takes a lot to kill big players off-line - and the dot-coms aren't high enough caliber weapons to bring them down ... yet.

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P&G Uses Data Mining To Cut Animal Testing

IT eliminates 80% of animal tests, removing source of social protests

BY GARY H. ANTHEA

OW. RIGHT IN THE kisser! Chairmanship of a \$38 billion company didn't earn John E. Pepper any respect from members of the People for the Ethical Treatment of Animals (DETA) In fact, PETA twice last year heaved pies into the face of the Procter & Gam-

ble Co. chief, protesting his company's use of animals in product safety tests But PETA has put its pies back in the fridge and now hails P&G's use of infor-mation technology to eliminate much of its animal testing. Last June, the giant maker of Tide, Crest, Crisco, Pampers Oil of Olay and some 300 other products announced it was ending immediately the use of animals for testing several hundred beauty, fabric, home-care

and paper products.
"That was a big step forward for that company, although it didn't by any ans cover all our concerns," says Mary Beth Sweetland, director of re-

pat on the back but still need a shove forward."

Cincinnati-based P&G has elimin ed some 80% of its animal testing since 1984 while tripling in size. Some of that reduction is from the substitution of human and animal cell cultures But most of it - especially over the past four years - comes from the use of data mining, analysis and modeling. The key is to use huge databases of information about existing chemicals

and past tests to predict whether a new product ingredient will be safe — test-ing it in software instead of on animals. In a computer demonstration for a reporter on a rare press visit to P&G's

secretive research laboratory near Cincinnati, a toxicology and bio-informatics specialist keys in the molecular structure of a new and untested chemi cal. The structure - in essence a map of how atoms join to form the molecu - zips against the structures of 450,000 known and previously tested chemicals in a 2G-byte Oracle database. Since it's a new chemical, no match is

found. But sophisticated search and display software from Oxford Molecular Group Inc. in Campbell, Calif., does find 43 near matches, similar chemicals called "structural analogues." The clos-er the match, the more likely that the untested chemical will have the same properties as the previously tested ana-

Edward D. Thompson, a cancer specialist by training "but now a database expert," explains how he might presen the results to a P&G product developer: "I would say, 'Well, we have a nitro group here, which in my experience says it's going to he a carcinogen, so I ıldn't use it." P&G has added to the structu

database information from external sources - such as the U.S. Environmental Protection Agency (EPA) and the National Cancer Institute — about the harmful effects of some 120,000 chemicals. Included are the results of more than I million tests on those enicals. This toxicology data is attached to the results of structures searches, put into spreadsheets and sent to P&G scientists anywhere in the

world who request it. If a significant number of the ana-logues found in a search are known carcinogens, the new chemical is simply

search investigations and rescue at dropped from further considerati PETA in Norfolk, Va. "They deserve a and no animals are exposed to it. Preand no animals are exposed to it. Previously, the substance would have gone straight to the animal lab. "You tested, you got the positive [result for cancer] and you lost six months of product development," Thompson says. "Basically, you tested everything."





BUSINESS

It gets a little harder wheo the analogues are known to be safe. "You have to make a decision - am I smort enough to expose a lot of people to this chemical based on what I know? That's a tough decision, and one we don't take lightly," Thompson says. Often, the answer still is to test the new substance on animals

Although the impetus for this work originally was to reduce research on animals, Thompson says it now also gives P&G better results at a lower cost. "If you do this right, you can do it in three days," be says. "You can't fill out the pa-

perwork for an animal study in that

for reducing or eliminating eve-inflammation tests - the ones that animal welfare groups often illustrate with photographs of a caustic substance dripping into a rabbit's eye. In tests of 130 chemical structures so far, a simulated eve membrane has in most cases mirrored the reaction of a real eye,

Thompson says. P&G has decided not to patent the model so it will be available to all companies

Katherine A. Stitzel, a veterinarian

and associate director of P&G's Human Environmental Safety Division, heads the company's search for texting alternatives and is a leader in the inter national animal welfare movement as used in acute toxicity tests in which rats are fed a chemical until half have died from it. "We are working to see if we can predict most of that with computers," she says.

Not all of the IT that is leading to animal testing alternatives is that sophisticated, however, P&G has combined the results of all its animal and environmental tests going back three decades with the structures and toxicology data into one giant, 40G-byte database. "We can often go back now and see that we've already tested something very

similar and so we may not have to do it again," Stitzel says And P6cG is able to apply statistical methods to this huge store of historical data in order to refine future tests. That

can allow a test to use fewer animals or lower chemical doses and still produce reliable results, Stitzel says, Stitzel is leading an initiative involv-

ing 15 to 20 companies to find a way they can share test data with one another without giving away proprietary information. That could involve their giving their data to a trusted third party. "We'd let them watch over it and search it and tell us the results," she says. "With enough data from enough different kinds of companies, any one com-

pany's data would be hidden." Meanwhile, part of P&G's challenge in developing animal test alternatives is convincing conservative federal regulators that its computerized methods are themselves safe

"Where there's already a perfectly ood test that uses animals, it's very difficult to move them to a new test they've never seen before," Stitzel says. "If you come up with a new test, they have all kinds of questions, and they can say, 'Go back and do it the other

Lynn Bergeson, an attorney who spe-cializes in chemical industry regulation at Bergeson & Campbell PC in Washington, says federal regulators may be more a part of the animal testing problem than the solution as new IT-based ernatives appear. "You can be certain that there will be a core group of scienSome Resources For Alternatives To Animal Testing:

International Program for Animal Alternatives, a P&G-funded program that provides research grants www.pg.com/about/md/grants2.htm

Altweb, Johns Hopkins University's Center for Alternatives to Animal

http://witweb.jhsph.edu

BioNOME (Biology Network of Modeling Efforts), a P&G-supported program for developing computer models of biological processes, at the San Diego Supercomputer Center at the University of California http:bionome.sdsc.odu

tists and policy makers who will be institutionally opposed to moving away quickly, if at all, from established [testing! protocols," she says.

As advice for PRG, which just a client, Bergeson says, 'They have to work the EPA, the international comnity, the scientific community. You really have to schmooze up a storm to make this work." But such schmoozing is something Stitzel does well, she adds P&G has invested \$120 million since

1984 - \$28 million last year alone - to develop nonanimal tests. *Of all major corporations, they are perhaps the biggerst funders of alternative met ods," says Martin Stephens, vice presi dent for animal research issues at the Humane Society of the U.S. in Washing ton. "P&G is part of the IT solution to the problem of animal testing."

Stitzel says IT will eventually allo P5cG to eliminate all animal testing, but she won't say just when. "People say to us, 'That's not possible,' but when my mother was born in 1884, no one would have thought you could fly an airplane, much less go to the moon."



AT A GLANCE

The Company At a Glance

Spun off from First USA Bank, it essentially became a start-up

SWAT Team Helps Spin-off Build IT Staff

For credit-card services company, going it alone meant filling key IT positions - fast

PHEN DIRECT Credit Card Services (FCCS) was Bo n First USA Bank N.A. in ngton, Del., in January

148 employees went along. But going independent eant creating a start-up. Even though the pany would con-

tinue to provide "cli-ent touch" services. the reality was that it had separated from First USA. No more human resources and recruiting department to

rely on, and no more name

With 45 administrative and formation technology jobs to fill immediately, the company needed focused professional help to fill the positions with-

from getting the business "We didn't have the reurces to do the cold calling that would have been necessary," says Cynthia Perrotta, senior vice president of human ources. "We have only one HR generalist. And it would have taken months to get new

recruiters up to speed and our FCCS needed experienced IT professionals who could hit the ground running in Oracle and graphic user interfaces (GUI) as database administrars, information systems applications specialists, prommer analysts and data-se developers. "The goal was

says. "It quickly evolved into ore heads and more diversi-First USA Bank is the largest les credit-card issuer in the

world, issuing cards in its own name, those of its parent, Bank

One Corp. in Chicago, and First Card and oo behalf of 2,200 partners, FCCS handles the marketing and acquisition to sign up credit-card cus-

On the front end, it is one of the largest direct mailers in the credit-card industry. The back end, handling all the information from credit-card applications and qualifying. requires cutting-edge

technology. That inchades Oracle and **GUI** and experienced trators, MIS applica-

tions specialists, programmer alysts and database develop-

Perrotta decided to outsource the recruiting to R.D. Rash & Co., which she had introduced to First USA. Three recruiters whom she knew from a previous shop, where they had worked together to hire about 500 IT profe in her final year there, now worked at Rash as the SWAT

lish Hardes

check and a drug test as port of the interview process.

Town recruiters FCCS's tough standards in an already tight IT hiring market made the potential pool of requires every employee to pass an aptitude test, a credit

tions meant Raab recruiters had to look at double or triple the usual 100 candidates they screen on the way to each solid

hire As a new, unknown company, FCCS needed to be introduced to IT professionals who were ensconced in their present jobs and preferred to work at IT companies anyway. "We had to have someone who could understand us and sell

dedicated to the project. ence calls to present candidates the recruiters had vetted for final interviews with managers. FCCS managers would

One recruiter spent thr days per week on-site at FCCS in Wilmington, where he could absorb the corporate culture and organizational psyche. Others at Raab's home office in Chadds Ford, Pa., were fully Rash held weekly confer-

Mo Web site at the time the company," Perrotta says ■ Wirsington, Del. Credit card marketing and operations Revenue: \$700 million

theo schedule some for interviews, give feedback oo others and decide to hold others for later decisions. "I know Raab's

recruiters get frustrated with our process, but they are always professional," Perrotta Raab's recruiters also p

sented the hard facts of what salary it takes to lure talent IT professionals from other jobs and consulting, pushing some salaries plus annu onuses into six figures. Any candidates Raab finds for a client are allocated to that client until it has made a decision. They don't get shopped By March 1998, the growing

pains of a start-up were retching FCCS. Karen Matteson, vice president of credit operations, needed information systems analysts, pro-grammers and a special projects manager facile in imaging and Web-based technologies to build her production team Ultimately, FCCS hired III new employees in 1998 and 173

in 1999 in all categories. "The people we hired have been menal performers," Matson says. "In the first eight onths they were at work, two

Willard is a freelance writer in Los Onos, Calif.



Time Line of the SWAT Team Screening and Staffing Effort

INDUSTRIAL STRENGTH INTERNET



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security you need and much more.

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climate control systems are standard.

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Three or the bridge.



BUSINESSOPINION

PAUL A. STRASSMANN

WORKSTYLES

Internet Leaders See Advantages In Non-Technical Degrees

There you 18 year old will have to dale competing in the e-commore world because she's magaring in phisocophy rater but compater source? To mode the A 1999 aurery conducted on behalf of health? Packed Co by Auchin, Seas-based incremental entire of source incremental method of the Packed competing with 1999 per sounce as competens with 1000 or more employees and annual invenience in a beautiful invenience in a beautiful invenience in a beautiful or more employees and annual invenience in a beautiful to a finite or a source and the packed or more employees and annual invenience in all seast 5000 million to finite million to the packed of the packed

college majors.
For example Carly Fronza,
who recently tools
over as CEO of HP,
recensed a bachelor's degree in medewal history and
philosophy from

Sandrod University.
And at a recent EScanmar at the University of Virgina in
Disarctitionities, serearl leading linternet
Land Shaward
and Landy graduaties of the school's
College of Arts and Sources,
sentiments that Shaward
audit

mering, Among them were James Sheward, CEO of Bue Bell, Pa. besed Florelink Communications Corp., and Michael McQuary, president and chief operating officer of Attente based MindSpring Enterpress Inc. Both grankanted in the early ISBOs with degrees or conservers and machicians.

Neither McQuery nor Sheward expected to work in high tech bad each nonethieless lound himsell not just working at but also leading internet companies. The two recently discussed the value of a liberal arts degree in the livternet economy with Computerwork's recorder. Abeliffs Dorts.

Q: How did your college major contribute to your curver marrent?

McQuary: If you're a psychology major, you almady have a tarry high risk quotient. You're not worried that you're going to land a job anyeshore - as opposed to [a] prefeer [major]. That entrepresenting gentiles continued the second continued the second

gart manifests éself. Bheward: Because (a liberal arts major (is not structured, é enables me lo associate two different things more readily than if I approach situations

Q: When you here recent graduates, does it matter if they have technical degrees vs. liberal arts degrees? McQuary: What we're looking for sn'i defined by academic curricitum. We want people

for en'i defined by academic cumculum. We want people who are bright and personable You can learn [the] inclination; you need to larow. The thaperty of software coders are bleral arts tolks, [who] elemyed computer coders as hebby Sheward: There are places in Fiberlank for people with

> grounds. We want to see someone (who is) change-driven. Q: What do you think is the value of a Borral arts dogree for the future

pary: The nature of the In sevent disall has a strong social quotient. Socializmo was an stant assect of my copenence at UNA. Luned my Inerests and contacts from school to get [my] venture up and running You can't be successful (in the internet world] unless you're willing to share and collaborate One internet company on its own can't survive Being in liberal arts aets you broader erap sure to the student population vs. the oursing school or in regreening where you're excess to the same group of people ward: in the internet world

creatively is critical because the industry is changing as rapidly. You don't have enough time to collect all the data. You have to be able to pack through that are happening in different realms and use that in your decisionmaking.

©: Did you over think you.

Q: Did you ever think you would be a techin? IdeQuary: No My undergrad cleases never encluded any computer science. To this day i can't touch-type. I type with my enter from:

Showward: No. I enjoyed solving roblems but wasn't mechanally inclined. Fin at a loss when no can breaks drawn.

GAAP helps whom?

N JAN. I. 1999, a new set of accounting rules governing systems development and software assets took effect. CJOs, software vendors and Washington bureaucrats will love the financial tricks it enables. But these rules will also expose the financial drain caused by inefficient and ineffective IT departments. All financial reports from public corporations must comply with the Generally Accepted Accounting Principles (GAAP) from the American Institute of Certified Public

Accountants. The new ruling, known as SOP 98-1,
"Accounting for the Costs of Computer Software
Developed or Obtained for Internal Use," requires:

■ Purchased off-the-shelf software, systems
development and systems integration costs

must be treated as assets and capitalized.

■ Planning, operations and implementation costs for all internally developed software may be expensed as a current operating cost and need not be capitalized ["Holding IT Accountable," Business Oct 18].

Business, Oct. 181.
Software vendors love GAAP's new rules. A
\$10,000 software license shows up as only \$2,000
or \$2,500 tassuning five- or four-year depreciation) in the customer's current-year
IT budget. It sets up a cycle of
planned obsolescence: When the
accountants have fully depreciated

the software's book value, it's time to buy the new model! ClOs will love these rules, too. Because software shows up only as a depreciation line in the budget, they will be able to show an immediate cut in IT costs and claim improved efficiencies. GAAP will make con-

ventional (and faulty) reporting metrics, such as IT spending as a percentage of revenue, took better. Software investments now account for 30% of the total IT badget. The costs of keeping faulty roftware operating consume another 24% for maintenance and support, migration of existing systems and personnel retraining. The change in accounting rules will enable CIOs to defer up to half of their reported IT expenses for

successors to explain.

Corporate management will also snap up

GAAP. The transfer of any costs from this year's

financial statement to the balance sheet will improve reported profits and please the stock mar
ket analysts. Plus, the new rules are sufficiently

ambiguous to let imaginative recording of assets

match the expected earnings.

Washington already loves GAAP. By reclassifying software as an asset, the new rules enabled the Clinton administration to count software sales as an addition to the economic wealth of the U.S. That enabled the feds to revise upward this year's gross domestic product — great news that's sure to set the stage for election-year boasting and taking care of high-tech bobbies

that advocate tax credits to boost software sales. But if GARP's new rules are so wonderful, whyworry? The problem is that they make ClOs much more accountable. When you set up software as a depreciable asset, you must account for the unful life of those investments to construct a defensible amortization schedule. If IT executives have spent \$IT tillion to install client/server infrastructures, why do you need another server infrastructures, why do you need another the problem of t

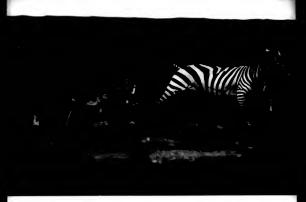
based e-commerce? (Folks, those are the numbers!) If you spent \$300 billion fixing Y2K, why do you need \$150 billion to replace failing "windowing" and "encapsulation" patches? The new standard will impose The problem demanding reporting requirements un corporate IT. That will increase is [the rules] administrative costs and squabbling make CIOs at the highest corporate levels. What will CFOs and chief financial officers much more say as they discover that for every 30 accountable. cents invested in new software, the IT department spends 24 cents to

keep applications alive?
Compliance with the new regulations will mortally wound many corporate IT departments. As a result, the economic viability of these nrganizations will be subverted by emerging application services that will be able to depreciate their soft-

ware assets over a large installed base. Software asset accounting will determine whether obtaining computing power from networked computer utilities is more advantageous than retaining large, in-house systems develo

Strassmonn (paul@utrassmann.com) in 1971 set up and sperated a large computer utility for delivering inexpensive computing power. It fell short of its promise because software economics weren't as favorable to networked support as they are today.





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new title has cropped up in many e-commerce groups across the country: director of e-commerce technology. The establishment of this role solidifies the need for managers with business savvy and technical prescience. This job title is being bestowed on people with 10 to 20 years of experience, who bring to the table either a mix of Internet development experience or in-depth techni-

cal development and management leadership. These people are also tapped into local e-commerce networks. They keep abreast of new trends and help

build relevant e-commerce skills in the local workforce. For those who may aspire to this new job, here's a look at how some early practitioners compare in different industry and regional markets. By Dawne Shand

Director of online operations Manheim Auctions

As a project manager, Foy joined Manheim Auction's original e-commerce

initiative to auction used cars online. Manheim Auction is the world's largest used car reseller. Four years ago, the company pioneered "cyberiots" to ement weekly auctions held around the country. The growth in new products and service extensions on its site led to the creation of a director's position in January.

Foy, who was promoted from massag-er, is the first to hold this position. He oversees the marriage of technical imentation to operations. With 10 wars of experience in marketing technical products, Foy defines customer peeds and works with each auction house to properly implement new online services.

"I turn development ideas from IT into viable online services," explains Foy. But he collaborates with a technology team that keeps abreast of informaresponsibilities include making overall IT strategy and technology decisions for Amtrak's e-commerce site and the corporate intranet Cortina also holds a marketing

derree, "which wasn't much use when I was installing networks years ago, but is very helpful in this arena," she says. Unlike those in many traditional IT management positions, as director of e-commerce Cortina must understand the broad spectrum of Amtrak's business, its partnerships and employee relations. To do so, she relies heavily on the marketing teams as well as corpo-

rate communications. Cortina says part of the draw was the

excitement of working in the travel industry, which has benefited most from e-commerce. Establishing Extensible Markup Language (XML) standards for the travel industry will create even more business opportunities of which she must be aware. Washington, a burgeoning technology hothed, provides ample opportunity for keeping up on the latest innovations. "When you actively seek to help your company with its most important business op-portunities, great technology projects

sees peers with a marketing focus sup-ported by a strong technology team and more technical directors backed up by But integrating Manheim's brick-and-mortar holdings with its e-comtend to follow," Cortina advises.

merce channel requires equal compe-tencies in the technology and business components. "Developing a Web site that applies cutting-edge technology and wins awards is no longer enou There has to be a revenue model that builds to profitability," be warns.

This pairing proves typical. Foy says he

savvy marketing team

ary Certina

With 15 years' experi-ence in IT, Cortina had previously been part of the team that created an award-wir Web site for the National Wildlife Fed eration, a nonprofit group. Amtrak chose Cortina for her knowledge of the Web and her IT leadership skills.

She has held the position, created two years ago, since January. Her to 40 technologists. She says she re-

Director of Internet technologies
FleetBoston Financial Group BankBoston Corp. has

long been recognized as an IT innovator. Its e-commerce group, formed more than a year ago, now leads the e-commerce initiative for the newly merged FleetBoston Financial Group, which combines BankBoston and Fleet Financial Group

Minton, who has 30 years of experience in systems development and implementation, was part of the internal team that defined the roles and responsibilities for this new group of 30

gards the role as a unique opportunity to collaborate with partners throughout

For the hank, the director-level position stemmed from the need for a focused and speedy buildup of the site. As director, Minton is responsible for implementing an Internet infrastructure, including mainstreaming the technology into the appropriate business

"The traditional IT group is my busi-ness portner as well." Minton says. "I have one foot firmly in the technology, one firmly in business

The team was staffed from within the company. It had little trouble recruiting, as e-commerce represents the next new thing for IT workers. These days, Minton's team is looking at new bandwidth capabilities, personalization, collaboration, security and wireless canahilities. "We are thinking about what people would want to he alerted about and view on a small screen," she says. Her career advice to aspiring directors is to never stop learning.

During his 10 years in the workforce, Buffing

Orion Auto d, Colo.

has been a financial controller and a technology consultant for Web and erprise resource planning systems. acton has been in his current post-

tion for 14 months. With this hybrid background, ffington manages both tactical and strategic issues associated with helping independent insurance agents get the right insurance product for their

Unlike the traditional IT managers he once had responsibility for as controller, Buffington partners with business leaders to develop technology software instead of responding to de-

"The technology is so different, you how to know how it affacts the business model," he explains.

He attributes OrionAuto's e-com merce success to "building a foundation, not by being too technical." With a staff of 50 employees located across the country, he is keeping a close eye on XML and IP telephony trends that may someday eliminate problems faced by customers that lack access to robust

Innernet connections In the Denver area, many midsize firms are beginning to formulate their strategic plans for e-commerce initiatives for next year, which makes staffing omite difficult

"We cannot compete I from a compensation standpoint) with consulting firms," Buffington says. OrionAuto attracts employees interested in leading-edge projects, or trains existing employees with potential. To foster more local activities. Buffington leads the new Society of Information Management chapter in Denver.



E-commerce director Consumers Energy Jackson, Mich.

Consumers Energy converted its electronic data interchange (FDI) man-

rector post more than three years ago Kerver, a 20-year veteran of the company, has worked in several business units providing IT expertise, including telecommunications and treasury units. There, he got involved with EDL which made possible innovations in streamlining the purchasing and payment processes. This remains the

heart of e-commerce," Kerver says. Consumers Energy now uses the Internet to help customers solve problems and check and pay bills online.

"You have to be an entrepreneur, in a way, and be unafraid to try new things with the technology," he explains. As energy companies face deregulation, Kerver says he firmly believes mastery of e-commerce capabilities will define who succeeds and who falters.

Being removed from the major techpology centers hasn't bothered Kerver. "You don't have to he located in a large city to be aware of what's going on in ecommerce," he says. Through conferences and periodicals, his team stays on top of trends such as XML. But be advises people not to get so far into the "techie world" that they lose sight of

their company's objectives. Kerver has also worked with local colleges to belp create curricula in e-commerce that will develop the appropriate skill sets for a local workforce.

Shand is a freelance writer in Somervill

Y2K: Overlooked Anything?

With less than a month to go, it's not too late to look into these 10 things you might have missed By Kathleen Melymuka

down and you're waiting for the year 2000 winds to, start blowing. But in these last nights before the date rollover, one nagging question is still keeping you awake: What might we v have missed? We asked an array of Y2K practitioners and experts to consider what might have slipped through the cracks at an average midsize or large business. Here are 10 things they suggested:

LEGAL LAPSES: State and federal governments have passed laws to protect your company from Y2K liability, but not all protections are automatMullen, Christian, Dobbins. "There are state laws where you're in great shape if you have done a few silly things like sending a pre-emptive warning to customers or having your board of directors adopt your contingency plan but if you haven't, you get nothing," he

Have your leval team do a quick eval untion of recent Y2K laws, he says, "and see if you have jumped through the hoops necessary" to get the protection.

AN UNBIASED LOOK: An indepen dent audit helped Richard Heath's team uncover some applications that were overlooked at Shell Services International Group of Companies in Houston. "The biggest risk is in major manufacturing facilities," says the senior Y2K manager. "There may be so many control boxes there that you're sitting on a box and it becomes

part of the scenery and you just don't recognize that there's an embedded chip in there." Having independent auditors check a couple of large facilities can give you a sense of how thorough you've been.

THE STORM BEFORE THE STORM "We keep talking about this as though suddenly at midnight all this stuff will start to happen," says Bill Shackelford, who conducts Y2K sem nars for Russell Martin & Associates, a corporate training company in Chica-go. But 2000 will start for some of the world while it's still early New Year's

Eve morning in the U.S. That means if your business relies on real-time communications with the rest of the world, Dec. 31 may not be the calm before the storm; it may be the storm before the storm. DAMMUNICATING IN A VACUUM

"We expect things like the mes to work, but what if they doo't?" says Bill Brydges, Y2K project manager at Comerica Bank in Detroit, Comerica has worked out a negative com cations plan where a lack of contact means action is needed. For example, if employees can't get brough for status reports, they will come into the office. Similarly, if system status reports don't come through

TECH BACKUPS: Did external service providers fix your systems using windowing techniques or other hodologies that your people don't w? If so, says Irene Dec, Y2K manager at The Prudential Insurance Com y of America in Newark, N.J., he ure that those outside providers are on-site during the date change and beyond to fix their fixes if your

6 WHAT ABOUT RECOVERY? "Companies often haven't looked at the period from when they have to execute the business continuity plan to when they're back up and running," says Chuck Aquilina, director of the Resolve 2000 practice at Keane Inc. in Boston, Suppose, for example, that you have to distribute your product m ally for a week. When you're ready to start automating again, how do you capture the data relating to the man operations that have transpired during the week? "It's oot as simple as starting up again," he says.

COMPUTERWORLD December 6, 1995

THE GREAT UNKNOWN: Despite all the planning, some things are go ing to take you by surprise, says Ed Yourdon, chairman of Cutter Consortium in Arlington, Mass., and a Computerworld columnist. Your company's ability to cope with this will depend on your people's ability to think on their feet. "We have to prepare our people and our culture to cope," Yourdoo says It's too late to change your culture, but encouraging a can-do mentality in the face of the unknown may get people in the right mind-set.

CUSTOMER COMFORT: If you're in a key supply or service industry, initiate contact with concerned cusrs on Y2K issues, says Mickey Galatola, Y2K project manager at PECO Energy Co. in Philadelphia. "Even at this late date, take the time to make a phone call, hold a meeting. Give your clients that level of comfort that they need."

PARTIAL FAILURES: Brydges says many companies have built con-tingency plans that assume a system is down. But more likely we'll see degraded abilities or one part of a syste miscalculating. "So you're not going to a full manual process, but you have to figure out how to take care of that one little subset." he says. You may want to modularize those contingency plans.

WALL STREET ROLLER COASTER Many companies are stockpili as much as 10% above normal suppl says Andy Kyte, an analyst at Gartner Group Inc. in Stamford, Conn. This means suppliers' and logistics compa nies' financial results may be artificially inflated in the fourth quarter only to dip steeply early next year as customers use up those stockpiles. "And the rewards you get for good re-sults [in the fourth quarter] aren't nearly as great as the punishment

you'll get" for bad results in the following quarter, Kyte says. His advice: If your company is af-fected, explain the artificial inflation in your fourth-quarter financial reports so the financial community will be read; for the first-quarter dip. 9



MISSION: When Bank of America invested in new technology, they knew success required that people could use it. But how? Traditional training was too slow; hiring new employees too expensive. Lockheed Martin's solution: a business-smart process called reskilling. It use real projects to teach new skills, guided by experienced coaches.





SUCCESS: Reskilling did more than train people to run computer systems; it taught people to rethink how they used those systems. The result: competitiveness sharply higher across the company, and a workforce with lower tumover. To see what Lockheed Martin IT expertise and for you, visit www.kockheedmartin.com.

There's Something About

Ketty own

Is your IT staff just going through the motions? Eli Lilly project manager Ketty Brown had that problem until she came up with her own way to motivate her people By Kathleen Melymuka



LINTON, IND., isn't a tourist attraction. Driving north from Terre Haute on Highway 41, you see monthy cornfleids until the huge hulk of the Eil Lilly and Co. plant blocks out the sumrise to the east.

out the summer to use dear. Cliatons is at a hotbed of technology either, so if you're an information technology person leach yenough to be working at Lilly, you may well begin and end your career there. There's certainly opportunity within Indianapolished Lilly for people with drive and ambition, but there's also room for people without those qualifies because there aren't many folks banging on the donost to set in — and there aren't

many places to go If you leave. Eight years ago, Ketty Brown found that she was getting bored. Marriage had brought ber to Citaton from a Lilly installation in ber native Peru, but the job in computer support. Rather than continue to a leepwalk. Brown took control and began a process of selfdiscovery that resulted in a new career for her and a new outlook on life for the people with whom she works.

When Brown decided she needed to make a change, she found ample resources through Lilly's career-planning process, which led her to realize that she was well suited for project management. Lilly supported her as she carned certification from the Newtown Square, Pa-based Project Management lastitute, and ber new career began.

Making a Connection

But as a project manager. Brown sometimes found hered leading people who were just going through the motions. Eather than becoming discouraged, she made a key connection. Many of these folls were in the same struation she had been in before the enimented her job. "To be unmotivated is just a state of mind;" she says. "The person is not really happy or satisfied with what they've doing." Brown began thinking about how to

apply to others what she had learned from her own journey. Her thoughts crystallized in the SURFER process, an acronym for Seek information, Understand people, Reveal opportunities, Facilitate involvement, Engage by coaching and Reward (see box, page 57). Weve are a great cureer analogs, says floorus: "We here highs and lowe in file." That's what the SUPPER. In the substitution of the substitution o

must begin again. That means that as soon as your people crest the wave, you and they should be looking toward the next one. The their vision far ahead. Brown says. "At midproject I'll say, "What are your other interestiv

Knewing your people is the key to motivating them. There are many tools to help a



The SURFER Process

ager learn about her people, from informal interaction to personnel pro-files, feedback surveys and personality and workstyle tests. "It can be formal or informal, but it has to be proactive," Brown says. Use the information to try to understand employees' strengths and weaknesses, so you can manage their resistance to change and get then

ready to accept new opportunities. Joni Query, a 20-year Lilly veteran, had been a computer systems technician for many years when Brown got to in her that would make her a good sys-

know her and noticed characteristics tems tester. She suggested that Query join her team as a validation assistant. "I was scared to death," Query recalls. Brown spent time reassuring ber, brown spent time reasouring ner, building her confidence and helping her envision this as a step to a better future. "People go at different speeds. so you have to pace it," Brown says. Ultimately, Brown persuaded Query, who says Brown's understanding of her

as a person was the key to her succe "Ketty tries to find what a person is good in and she challenges them." Query says. "You may think you can pet this far, but she puts it out just a lit-

tle bit further and kind of pushes you." The pushing doesn't stop. Now

Brown is preparing Query to move up to validation specialist. "Ketty is a challenger and a driver," Query says "If it wasn't for her. I would have still been troubleshooting computers. But if I become a validation specialist, she'll still find something else."

ce the person accepts the new job, let him know there's no turning back. "Once you're in it, there's no way back." Brown says. "You have to make them realize they're on board."

Do this by setting clear expe and fostering a sense of ownership. On Brown's team, for example, you can't come forward with a problem unless you have a solution. "That makes them hink about the next step," she says. on to full. "(Make) them make the decisions," Brown says, "Let them learn from their mistakes. The important thing is they can get up and move on."

Mike Garver had been a systems analyst at Lilly for only six months when Brown started encouraging him to take on supervisory duties. That was chailenging to Garver because he had alwars worked alone and had trouble delegating tasks. "It was hard for me." he recalls, "but Ketty worked with me and said, 'Delegate. There will be more things out there for you to handle."

Garver later took on a second employee and, recently, a third — all in less than a year. "Ketty is very good at expanding your comfort zone and allowing you to take on more challenging things," he says. "She knows when you're petting to the crest of that wave and it's time to start thinking of some thing else. You need somebody to gently push."

When people are going in the right direction, Brown says, "I step back, I let them achieve on their own because the accomplishment has to be their own, but I provide constructive feed back for continuous improvement."

"She doesn't jump in and help till she absolutely knows you need it," says Lauren Toffolo, a consultant who has been working with Brown's team for a year. "She allows them to try, and they

accomplish so much." The final step in SURFER is to reward your seple for success, using money and such angibles as the development of a real

m spirit. "You can give them trinkets but if you haven't built that rapport. that synergy, that honesty, they won't trust you," Brown says. Brown often has staff meetings and

celebrations at her home, where she cooks something special for the team. Anytime Brown receives a *recognition check" from Lilly, she uses the money to take everyone out to eat, says Query, "She tells us it's because of us. that she got the recognition check and she is sharing it."

Brown says her greatest reward is her people's success, but the SURFER method offers other rewards for managers as well. The more you know about your people, the less likely you'll be surprised when someone transfers or vetires, she says.

And SURFER gets easier with time "I see now that my folks are applying it unconsciously," says Brown, and her team demonstrates that. "I like chang even though it's difficult," says system administrator Cricket Switzer, "When you start something new, it's really ex-

citing, so you never get stale or bored." Toffolo, who has worked at five efacturing plants in rural Ind says Brown's team is different. "In oth er companies, I've seen people not want to come in, call in sick a lot, gos sip about each other a lot," she explains. "This is a wonderful environ ment. Ketty motivates them so they

love to come to work. They're really excited about their challenges Brown clearly has given her IT tea an outlook that money can't buy. "Your

life goes on," Switzer says, "and if you stay in one little spot, you're going to miss so much."

finding the right people to keep up with all the rapid changes in network technology?

A lot of companies are turning to belificatif the out of a cill with our experts who con
design and manages your network, with everything from opposity planning and security
ossessment to managed e-commerce and help dest support. And regardless of the size
or completely of your network, we offer complete immagement and turnley solutions. All
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MANAGED NETWORK SOLUTIONS. So, what do you do when you're having trouble



BUSINESSQUICKSTUDY

Market Capitalization

ple concept. A opany with a track record of significant profits typically saw its stock price rise with earnings, which in turn raised the company's total value. Meanwhile, compa-nies without significant profits saw their stock prices stagnate

or fall, dragging their total val-Then along came Netscape Communications Corp., which had only limited revenue and had never turned a profit. In 1995, the 16-month-old maker of the Navigator browser went public and saw its stock immelistely skyrocket, making coder Marc Andreessen a

ionaire and chapeine

the way at least some compa nies are valued by Wall Stre That scenario has since been repeated many times. Companies such as Priceline.com Inc. have experienced mammoth initial public offerings as investors have rushed to throw millions at tiny Internet-relatpanies that are high on concept and low on earnings.

"Netscape really set the stage for all this," says Pimi Fox, director of The Pimm Fox Group, a San Francisco money management firm. "It was a new way of generating inver-enthusiasm in companies."

From Post to Future

What changed, at least when es to Internet com nies, is that investors are lookng not at a company's history out primarily at earnings nking analysts say, on the n that the Internet will amentally change the way ess is done. They're also demonstrating their belief that the companies that figure out bow to capitalize on the Net first will dominate the market.

"That's why these companies can have multimilliondollar market caps when they nave a couple of million dollars ues and tens of millions in es," says Rajesh Kothari, a in sales and tens of millions in

DEFINITION

Market capitalization, or "market cap," refers to the total value of a company's outstanding stock. It's calculated by multiplying the current market price of the company's stock by the total number of shares of stock outstanding. In recent years, the belief that the Internet will dramatically change the way business is done has driven up the market caps of Internet-related firms.

rincipal at GMA Capital, an I tment banking and health care venture capital firm in Farmington Hills, Mich. *[Investors] are looking at the potential because that is where the value is."

The astounding rise in the stock prices of some Internet es can make for son strange situations, Santa Clara. Calif.-based Web portal Yahoo Inc., for example, is worth more on paper (\$59.5 billion as of late November) than De-troit-based General Motors

Corp. (\$47.6 billion) even though GM has more than 100 times the net income (\$2.9 hit. line or \$25.6 million) But market caps can fall, too.

When they do, investors eager to maintain value can put pressure on top executives, which might lead to downsizing the my to improve the bottom line or even a de-emphasis on critical technology projects. For corporate info technology, there are other im-

- and hence market valuations - of traditional companies that are slow to take advantage of the Internet are beginning to stumble. One example is CVS Corp., a pharmacy chain in Woonsocket, R.L. CVS stock has fallen 30%

this year, even though revenue and same-store sales are up. according to Steven Feinstein, a professor of finance at Bab-son College in Wellesley, Mass. Feinstein says the stock of plications. Analysts say that in CVS, which only four months some sectors, the stock prices are established an Internet presence, has stumbled because of competition from online competitors such as Drugstore.com Inc. "If you think the Internet is how people are going to buy drugs, then those companies are going to be cannibalizing the (brick-andmortar) componies," Feinstein says. "CVS is scrambling to be

That kind of news might in spire the folks in corporate IT to lobby their executives to move as quickly as possible to take advantage of the Internet, at least if they're interested in the value of their company and in any stock they might hold.

"A lot of companies out then are in the same boat as CVS. and their stock value will be hurt to the extent that they don't jump onto the Internet, says Feinstein. "[Corporate IT] could point to the CVS stock price and say. You should be listening to us a little more."

Bon't Count Your Riches

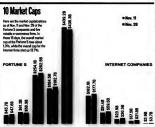
But in the Internet age, who stock prices can rise and fall 10% or more in a day, companies also have to be careful tion on market capitalization.

John Nesheim, author of High-Tech Startups [Strategic Enterprise Consulting, 1997]. says firms that do that run the risk of distracting their employees from the bigger goal of developing good products. Newith the CEO of a West Cons Internet company who's struggling to keep his employees fo

cused as the stock price rises. "The company went public at 12, and the stock started go ing up to 18, then 22, then 32." be says. "Every time it goes up a buck, people are sh and sending e-mails around. "The objective," Neshei adds, "is to deliver consi more value to the shareholders

is moved by stock price ins of customers and end users." Duffy (tduffy62@c

and not to get involved in these situations where the compa com) is o freelance writer in



IOE AUER/DRIVING THE DEAL

We have ways to make vendors keep us happy

THE EARLY DAYS of a relationship are the sweetest, aren't they? Your partner, the vendor, is attentive and responsive to your needs. But as time marches on, the vendor's attention to your happiness recedes, at least until you put new money on the table. How do you keep the vendor focused on your happiness throughout the relationship? A big part of the answer, of course, is to make sure your contracts contain appropriate, meaningful and attention-getting remedies for subpar performance. But sometimes we find out the remedies we have aren't as effective as we'd hoped. So let's have additional ways for keeping

the relationship interesting One way is to offer positive tives. Nothing retains a vendor's attention like the prospect of making more ey. Performance incer tives are a valuable trade-off to offer in return for accepting osed remedies. For instance, if the vendor will mit to reasonable remees in the event that its product or service fails to per then you will provide addinal compensation if the (This should be done only en you receive additional

dor's exemplary perfor-Yet another approach is

managed competition. It can go a long way toward obtaining a much greater level of vendor performance. Here's how it works: When feasible, separate several pieces of business in a given procurement, and then distribute them among the most qualified competing vendors. Mon-itor the performance of these

vendors over a period of time

After each performance peri-

or eliminate the proportion given to the lesser performers. In addition, tell each vendor that it will become a former vendor if its performance is on the bottom for two consecutive periods.

ese are only two methods we can use to motivate yen does to remain attentive and responsive. In any case, the more tools we use to keep

od, reallocate the proportion of any new business distrib-

uted to each vendor. Award a

greater percentage to the best-performing vendor and reduce

Sector Inc. to manage its client/ lary of Se

vendors in line, the better chance we have of the relationship working happily ever

Former Robber Comes Clean

about the outragrade fee that was demanded from an automaker ["Automaker Slams Brakes on High way Robbery," July 5] is especially interesting. It contains a great idea for a contractual right we should all

have written into our software deals Mark Kumicich writes: "As a former account exec utive for a large ware vendor I have been on

the vendor's side of the table on n

"Ever since IBM let the up-grade license fee genic out of the bottle, companies have been getting pinched. In a sit uation remarkably similar to the automaker's, one of my

close to \$500,000 to upgrade. The decision was most made [by the customer] because they didn't have the time to implement the competitor's package prior to our company pulling the plug — which we were pre-

pared to do. "But in the new contract, they added an addendum that would extend the license for 12 months after writ-

ten notification of nding upgrade they notify the vendor as late in the contract as possible, they will have the time to look for alterna-

tives while being covered by the extended contract." Thanks for

sharing, Mark Good stuff! You've helped a lot of

Question: Has it been your experience that it's common practice for software suppliers to use thrests, intim tion, a customer's denen dency and catch-me-if-youcan contracting policies? Or are these behaviors isolated

events? E-mail me at ioca@ dobetterdesis com B

omers ended up paying F-Commerce Growth

se in an effort to

w lane, 's sellow

ers will be able to do o

benefits as a result of the ven-

Street Value and 18% Street

aToyo loc.), according to a survey of 2,626 U.S. adults by Harris Interac-tion in How York



Look around. You don't need a statistic to understand the urgency of getting your business online. You don't need experts to tell you that eBusiness is the business model of right now. What you need is a portner who can give you a fully integrated solution that delivers measurable results and who ultimately helps grow your business faster.

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TECHNOLOGY

DEPLOY WIN 2K? Not so fast . . .

Windows 2000 may be just around the corner, but the majority of IT managers we surveyed said real-life deployments will have to wait six months or more once the operating system is officially available. § 78

...NT 4.0 IS HERE - AND STABLE

Even as Microsoft prepares Windows 2000 for general release, many customers are still buying and instilling the older Windows NT 4.0. More than three years after its release, they figure NT 4.0 is finally stable, particularly compared with a new unpatched operating system like Windows 2000.0 808

BLUETOOTHACHE The emerging Bluetooth wireless data standard could, for example, make it simpler to wirelessly print from

ample, make it simpler to wirelessly print from notebook computers. But analysts warn that Bluetooth also could slow down other wireless data transmissions. 8 65

REMOTE SUPPORT Vendors at Comdex/Fall '99 demonstrated products that were designed especially to help the

ucts that were designed especially to help the IT manager facing a remote support crisis. HP offered remote office servers, while start-up Mirapoint demonstrated e-mail servers and messaging router/ filters. > 65

ORACLE ASP DEAL

Oracle and Australian telecommunications company Telstra are reported to be ready to partner in an application service provider deal that would be the largest in the Asia-Pacific region. 9 68

PC GREMLINS BEWARE

We look at three desktop antivirus tools that promise to ward off malicious programs that can wreak havoc: McAfee VirusScan, Norton Antivirus 2000 and PC-cillin. 972

OUICKSTUDY

Turning raw data into data warehouse gold involves collecting business information from many sources in the enterprise, covering all aspects of the company's processes, products and customers. § 74

FLASHBACK

In 1997, e-commerce became serious business, but there were still bandwidth problems, fears about security and inadequate technologies that kept some companies from getting into the game. § 78

AOL EUROPE RUNDLES UP

Trying to lure more European users online, America Online Europe has struck an agreement with Intel to deliver inexpensive PCs bundled with online access across Europe. 1 60



LEANER, MEANER, MOBILE DATABASES

THIRTY FARS 480, a database server required a mainframe computing environment the approximate size and weight of a station wagon. Today, start-ups like PointBase can take massive corporate databases and extend them to mobile devices like cell phones, handhelds and Internet appliances. The downside? Although mobile databases require less memory, they're

also much less powerful.

"The Power of Now is about the future.

It is a book that details an emerging

trend that will affect all of us. in one way or another, as we progress through the 21st century. It is a book about business, about speed, about competition. about technology, and about success in an increasingly global

networked society"

-Scott McNealy, CEO, Sun Microsystems

"Any company whose value proposition relies upon the close

> collaboration of its business units needs

more real time intelligence in its IT environment.

Ranadivé outlines why and how we must reformulate our business and IT strategies to

increasingly global and networked society."

-Eric Benhamou, CEO, 3Com

compete in our

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transactions occur. The "real-time, event-driven" vision that enabled these technology breakthroughs is explained by TIBCO's President Vivek Ranadivé in his new book The Power of Now. It's part of the Computerworld Books for IT Leaders series. So think fast, pick it up at any major bookstore or on Computerworld.com

Computing M

TECHNOLOGY

BRIEFS

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about a market of

XML Integration Tool

on Corp., a start-up wands do Woor, Cold., this wook to release a set of busin

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Data-Jamming Issue Could Stall Bluetooth

Analysts warn of possible interference between different wireless data standards

harely understand the world of Bluetooth and what the emerging wireless promises for linking laptops. cell phones and handheld com puters over short distances. Bluetooth could make possible what experts are calling the personal-area network by allowing users to transmit small amounts of data at about IM bit/sec. up to about 10 meters

over the 2.4-GHz radio fre-But analysts warn that transmissions from Bluetooth-enabled devices could jam transmissions over wireless LANs that use the 802.11 standard, resulting in very slow tra sion speeds for users on both networks but mainly on 802.11

Although 802.II use is relatively rare, such jamming could cause messy problems for organizations that use the standard. Then there are other problems that vendors in the Bluetooth Special Interest Group are working on but ple, how does a user know that when a Bluetooth-ready lapt or cell phone is turned off, the Bluetooth data transmission capability is also turned off, thus preventing improper data

transmissions? Only one Bluetooth device has been shown and is scheduled to ship in mid-2000. Demonstrated at Comdex/Fall '99 in Las Vegas last mooth, the

Rivernorh Hendset by Research Triangle Park, N.C.-based Eric-

non-PC devices such as digital

sson Inc. connects wirelessly to a mobile phone. That allows hands-free calling by transmitting to a phone inside a briefcase across the room.

Bluetooth chips will be shipped in as many as 20 million laptops by the end of next year, analysts said, adding as much as \$70 to the cost of each machine. The number of Bluetooth-equipped notebooks could rise to 34 million in 2003. said lovce Putscher, an analyst at Cahners In-Stat Group in Scottsdale. Ariz. Counting

cameras and cars, she predict-

ed 200 million Bluetooth devices by 2003 In addition to connections to phones, PCs and printers, workers with laptops conference rooms and use Bluetooth to reach a wireless bub in the room that could connect them to the wire-

line corporate LAN. The world could without Bluetooth, but every user will want it for convenience and personal style," instead of using a cuble or infrared port for connecting devices, said Ken Dunameds to a laney, an analyst at nameds free calling Gartner Group Inc. in

companies with as few as 300 people but says the units can

scale to several thousand users.

These are turnkey application

serving kits; the e-mail systems

provide Post Office Protocol

and Internet Message Access

Protocol, as well as up to 286G

Mirapoint's Internet Mes-

sage Router siphons the mail, Internet voice and Internet fax

load from multiple servers,

bytes of message storage.

etooth operates in fre a Bluetoom operates in the quency-hopping mode over dozens of channels in the 2.4 GHz radio frequency reserved for industrial, scientific and medical uses. 802.11 wireless LANs operate mainly in direct sequence, sending bits of data over three channels inside the 2.4 GHz frequency.

If both Bluetooth and 802.II devices are transmitting in the same effective range, Blueto could jam 802.11 transe sions, drastically sh the data rate for 802.11 devices or possibly Bluetooth as well

Stamford, Cont Putscher said conflicts between Bhjetooth and 802.11

wireless networks will be "insignificant" once Bluetooth products hit market. However, several other analysts predicted technical problems could delay rollout. Several Bluetooth vendors

including Intel Corp. and Ericsson, said they are aware of the interference concerns. But Skip Byron, director of technology market development at Ericsson, said it will be up to vendors of 802.II equipment to adjust to accommodate Blue-tooth. He predicted a 20% reduction of data speed when both types of transmissions are poeratine in the same space.

Faster Speeds

Like Bluetooth, the 802.11 wireless LAN allows transmis sions along the 2.4-GHz band, but it works at faster speeds of at least 2M bit/sec. in LANs from 50 to several hundred feet, with transmission speed declining at greater distances,

Such 802.II LANs are relatively rare, but they are used by companies such as Deli Computer Corp. in Round Rock. Texas, to allow workers to

share data. Meanwhile, analysts advise IT shops to test Bluetooth devices, once available, within existing wireless networks and to be sure the Bluetooth can be shut off easily if problems de-

Curing Remote-Office Blues

Now that Y2K preparation is just about wrapped up, IT managers will be looking at the next its tool-less chassis and colorig problem: How to support remote branch the company has been

Vendors at Comdex/Fall '99 nonstrated products de-ned to belp. Hewlett-Packard Co., for example, showed me the LC-2000-series, one of the ni-

A remote office server has to moonents make it ch easier for the help desk to talk a remore user through simple fixes. There are many re-

lant capabilities available,

and power supplies to optional RAID arrays for storage. And HP offers a hardware-based remore troubleshooting tool that

even when the rest of the system is dead. Pricing starts

\$2,500, and the LC 2000-series server will ship next quarter with a 133-MHz processor, reant fans and power supplies, space for six hot-swap drives, six open Peripheral Component Interconnect slots and support for an additional processor and optional duplex-

One new company, M. point Inc. in Cupertino, Calif., demonstrated e-mail servers and messaging router/filters that would fit right in with the LC 2000. The company markets its Series 200 and M0000 Internet Messaging Appliances to

runs it through antispum filters and performs inbound and outbound virus-checking before It costs about \$27,000, how-ever, which limits its use in



IT LEADERSHIP is about using every opportunity—every technology—to reinforce your company's purpose. It's about defining business imperatives and driving the acquisition of the right sechnology. But the daily demands of running a company and and Infrastructure doubt about about a little to get up to upon the latent innovations.

As Director of the AMS Centers for Advanced Technologies, Dr. Butler's mission is to increase our understanding of emerging technologies. "Ours is a commitment to keeping AMS clients on the frontier of IT practice," the says. "To address technologies that will fundamentally chance the business tundescape."

YOU CALL THIS WORK?

MONTHS BEFORE MOST OF US SEE THE LATEST TECHNOLOGY.

DR. BUTLER GETS A PEEK AT THE REALLY INTERESTING STUFF.

For example, her ream's initial XML research yielded an intelligent agent that collects relevant information scross multiple sources the synthesize, cangesties and dimensional in based on a user's specified interests. "Dur Next Generation Enterprise and Business Intelligence & Knowledge Management labe are collaborating now to evaluate emerging some-manner, minist point, the proudily reports. "We'll be releasing the results soon."

And where does Dr. Busler gain her understanding of emerging technologies? From her peers, at conferences, from the Web and from Computerworld. The Newspaper for IT Leaders.



Maturity Keeping Win NT 4.0 Alive

While Microsoft preps Windows 2000 for launch, many still buying current version

ALL THEM SLOW, hype-bustingly non: They're the users who are buying Windows NT 4.0 even as Windows 2000 is poised for

launch According to Gartner Gro Inc., NT 4.0 will outsell Windows 2000 next year by a near 4-1 ratio (see chart). The reaown engineers and users say, in that NT 4.0 is mature and stable, while Windows 2000 is an

wn quantity Bill Peterson, an analyst at International Data Corp. in ingham, Mass, agreed that users will keep buying licenses of NT 4.0 for at least a year after Windows 2000 is released. Three years after its release NT 4.0 is stable he said. Windows 2000, despite ting, is still more of a risk, and relatively few applications take advantage of it, he said. A Computerworld survey of 103 information technology managers showed that most

plan to wait six months or more before migrating to Windows 2000 (see page 76, "Win 2K Migration: Life in the Slow

"Experience has shown that ually Microsoft makes its software stable sometime after Service Pack & said Steve Deaio, vice president of system architecture at New based Emigrant Savings Bank That's not going to happen for some time after the release of Windows 2000."

Microsoft is on Service Pack 6, more than three years after Windows NT 4.0's release. Peterson estimated that Service Pack 2 for Windows 2000 won't be released until Sep-

Emigrant is wrapping up a

NT 4 Ever? Gartner Group expect NT 4.0 to sell for a wh

NT 4.0 will continue selling through 2001 Windows 2000's stalled base won't

NT 4.0's end of life won't arrive until the

rollout of NT 4.0 to more than 750 workstations, finally ditching Windows 3.1 and the 16-bit world. Why wait so lone? Sensitive to total cost of ownership issues, the company wanted a corporate-oriented operating system, rather than Windows 95, DeMaio said. NT 3.51 ther was NT 4.0 until Service Pack 3.

Even with Service Pack 5, the company isn't trusting NT 4.0 with its servers, because the bank feels NT 4.0 falls short on

Aim is to increase

users online, America Onlin Europe said it has recent

struck an agreement with Intel Corp. to deliver cheap PCs

dled with online access

ties. The servers remain on Novell Inc.'s NetWare. DeMaio said Emigrant will get many of the administration benefits of Windows 2000, such as a directory, by using Novell Directory Services and ZenWorks. But finding a Windows integrator that didn't push the Microsoft-only line delayed Emigrant's rollout. DeMaio eventually selected CNS Group in

Norwalk Conn. Despite pitches and pressu from the channel or Microsoft. users should put off Windows 2000 until they're ready, analysts said. Although it is phasing out NT 40 certification [News, Nov. 1], Microsoft will continue to support NT 4.0, analysts said. Peterson, for example expects NT 40 to be in

use so long that Microsoft will release Service Pack 9. When Metropolitan Life Insurance Co. and IBM Global Services beg planning the New York insurer's \$00-server, 2,500ekstation rollout of NT 4.0 last year, the insurer wasn't waiting for Windows 2000 to be released. said John Dusza, applica-

tioo infrastructure devel-

soft doesn't typically delir software on time," he said. But NT 4.0 had become stable, and Met Life, which befo this had no compelling need to upgrade from DOS and Winws 3.1, wanted the capability

to deliver Web-based applications to the administrative staff in 500 sales offices. That required a 32-bit platform to run modern browsers. While the insurer is sticking to NT 4.0 on the server, over the next 18 months its sales

agents will get Windows 2000 on their iaptops. The reason: Windows 2000 is believed to be a better notebook operating system than NT 40 thanks to improvements in power man prement and Universal Serial

Bus support. Dusza added that the company probably won't wait three years to broadly roll out Windows 2000 as it did with Windows NT 4.0. But early into the rollout, NT 4.0 is proving to be stable, meaning it won't be replaced by Winds 2000 anytime soon, he said.

The NT Plunge

and Australia and put pre on Telecom New Zealand to come up with something simi-lar. Telstra is expected to buy up to 60% of New Zealand's Clear Communications, which is owned by British Telecom-

The implications for Oracle are global, because it has no strong alliance with any major Telstra is tied to Concert, the AT&T Corp./BT partnership. Telecom New Zealand

likely to form links with MCI WorldCom Inc., which has a relationship with Electronic Data Systems Corp., to which Telecom has outsourced its

across Europe. AOL Europe, a 50-50 joint

ture between America Online Inc. and Bertelsmann AG, will work with PC manufacturers to offer users an integrated package that combines the purchase of PCs based on In-

to a joint statement. Consumers will pay only one price for both the PC and the Inter-European online use net access service. The offer, which will be Trying to lure more European rolled out throughout Europe

over the next few months, will differ from country to count In the U.K., for example, new members of CompuServe - an Internet service provider owned by AOL - will get a cash rebate on PCs from Fujitsu Siemens Computers BV. Further details on other of-

fors weren't available.
The high cost of hards often a barrier to consumers purchasing a PC, AOL Europe

AOL. Intel to Bundle PC Network Access aimed at users driven to pur-

chase a PC mainly to get Internet access The deal still doesn't solve the problem of high per-minute online charges, which most users throughout Europe pay to their telephone carriers. Many analysts see this as the top barrier to higher Internet penetration in Euro AOL Europe, with its two Internet service provider brands

AOL and CompuServe, has 2.8 million members. It has separate Web sites in each European country. D'Amico writes for the IDG

News Service in Munich.

Oracle May Be Readving Deal In Asia-Pacific

Oracle Corp. and Australian

Telstra Corn. are reportedly ready to partner in an application service provider deal that would be the largest in the Asia-Pacific region.

Telstra executives met with Oracle CEO Larry Ellison in the U.S. last month, ostensibly to talk about WebTV. But insiders who attended Oracle Openworld in Brisbane, Australia, said an application service provider deal could be as close as two weeks away though they said it's more like by that the deal will take several months to finalize

In Europe recently, Ellison spoke of an impending large deal with a major Australian telecommunications company Oracle marketers at Open world were reinforcing the application service provider mes sage as Oracle positioned itself

in the e-commerce space. New **Tenhand Fillects**

A deal would have implica tions for New Zealand, where several companies have spoken of delivering application service provider capabilities. An agreement with Oracle would give Telstra a strong offering in both New Zealand

munications PLC (RT).

Jackson writes for Computer-



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Data Right in the Palm of Your Hand

Start-up extends the reach of corporate databases with PointBase Mobile edition

av AMY HELBN JOHNBON
a database server required a mainframe computing environment the
approximate size and weight of
a station wagon. Today, a database can run on a cell phone.
Doint Dane lor in Son Mateo.

PointBase Inc. in San Mateo, Calif., may be the one that puts that database in the palm of your hand.

Of course, to paraphrase a carmaber's slogue, this air's your father's database. Although mobile databases like PointBase Mobile and Serve editions have small footprints — as little as 270K bytes of memory are required to run such applications — they also have fewer features.

Be content with basic SQL capabilities of the SELECT, UPDATE. INSERT and DE-LETE variety, plus some multiuser locking features if you desire. Leave the complex stuff for when you're working on the enterprise system. Don't expect to be able to tune Point-Base; on the other hand, administration is to negligible that an ordinary human can handle the chore.

Channes Accounts

Bruce Scott, founder and current president and CEO of PointBase, says his customers like those trade-offs just fine because they use PointBase to extend corporate database applications, not replace them. The extension usually involves taking dats off the cor-

volves taking data off the corporate enterprise system with a cell phone, in a handheld or personal digital assistant (PDA), on a laptop computer or at a Web site, says Scott.

or at a Web site, says Scott.

PointBase runs on a variety
of handheld and real-time operating systems such as Windows CE, Poion, ISI, WindRiver and PalmOS. Scott's customers' usual scenario is to inregrate PointBase into an ap-

plication that enables users to interact with data on a remote of device, then synchronize the remote data with the central darabase back at home base. That's pretty much the secrasio Chris Veal. the direct of applied research at New Yorle-based Big. 5 accounting of the company's Auditor's Workstation software, a work-flow and evidence-collection application used by the company's on-site auditors. Veal wanted his laptop-toring teams to be able to remain independent of the contra

PointBase Inc.

Location: 2171 S. El Carrono Real, Suite 1110, San Mateo, Calif. 94403-1655

Tulephone: (650) 570-6560

Miche: A small-footprint database written in June Why It's worth watching:

tation means managers aren't star with a single handhold platform. Company willcor: Brace Scott, president, CEO and founder

Milentones:

- James y 1990: Company founded

- May 1990: First product basech

• Informer Carpt, Carpet Lorge, Microsoft Carp, and Sylvess Inc., were a piece of the small-hospinet market. PointBless (and its custtomers) could be trampied during a Dand-se. soward-Solutie bettle. S-SE, can be savy distalance technology, but you often can do past as used with your branchiad's plain-Jans bill option.

wax 30

Partmers: DataMirror

d flags for IT:

estomere: Symantec Corp., est & Young, Evergreen Internet

Since you're trading size for facres, be sure PeintBase has the

Hand
firm Ernst & Young LLP, envisioned when be chose Pointlasse for the database portion
of the company's Auditor's
Workstation software, a work
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ditors sometimes landed in places where a connection back home was expensive and unpredictable. At the same time, those laptops couldn't be data islands; Veal also needed a way to easily replicate the data the teams collected on Ernst & Young's central servers. With a reswerful Jamon in-

they examined clients' books

With a global clientele, the au-

with a powerful laptop instead of a constricted PDA as this platform. Veal could have on chosen searly any major database vendor's product as the storage portion of Auditor's Workstraion. But PointBasehas one thing he found irresistible. If written in Java, the stame language he used to build the Auditor's Workstraion.

What PointBase's Java architecture gave him, says Veal, is cross-platform use and reliability. You can deploy [Point-Base] with a lot of certainty that it is not going to corrupt or in any way interfere with things that you already have. on whatever platform you're going to install it on," Veal says.

The Lure of Java

PointBase's Java heritage is one of its key features, serior Anne Thomas Manes, an analyst at Patricia Seybold Group in Boston. It allows PointBase to move its product onto new platforms. Itike handhelds, which have no de facto stan-

dard operating system to turn, the presence of a SQL database on these devices will enable inCOMPANIES of ormasion technology departments and thirdparty software vendors of cerebon more sophistito develop more sophisti-

to develop more sophisticated applications than they were able to build with a handheld's file system. Manes says PointBase is go

names says routines or agoing to face a marrheim chaiing to face a SQL database. "They're happy with the [exising], systems," she explains, adding that the majority of the palmon papelications don't need a database. But for users with more complete data management needs, a database the gament needs, a database the explaint of the complete data mangement needs, a database the click it will have decent success in use in more complicated applications that are implement colo n handbelds," she says. B

shouson is a Computerworld contributing writer, based in the buzz

Tough Market

The small-footport database market to crowled. Besides such will-known enthers as BMT o BMZ Everywhere. Microsoft Corp.'s SQL Server for Windows CC, and Personne Software. Inc.'s Pensant-SQL 2000, his market has more healthy contenders than will for a mobile phane's CCD. Top compilities include the following:

RDM Conture Software Corp.

wew.contucasoftware.com RQM came to Related Shores, Califbased Centus through the 1699 acquisition of Rama Corp., a 5'-year-old embedded database film. Last month, Centus missaed Version 5.0 of RDM, a scalable, mallisuser database engins with supchoresization and Activity Support.

Cloudscape Informix Corp.

www.informic.com Internat in Merito Park, Call., got into small-footpark disablases by purchasing Oxidenet, Call.-based Coudroses ing. Oxidenet, Call.-based Coudroses, Call.-based Coudroses, Call.-based Coudroses, Call. Call. Patents September (Group, 1945) Coudroses in Call. Call.

Oracle8i Lite

create comcreateB. Lite, a minicosan to Oracin's enterprise distalates product, has its roots in the C language, according Mannes, so it must be ported separately to each new platform - a limiting factor in contrast to PrientBay, which will arm or anywhen with a Jase Writal machine

Sybase UltraLite Sybse Inc.

Emergetik, Calif-based Sybone has a distatuse with a foodprant on small as SOS bytes. It am own will willow CZ will be some of Palm obsess. The company plans to more Ultrail as to 16M feet in the CALIF of the CALI



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SAS

Stop Desktop Virus Gremlins

's YOUR PC protected from the latest viruses, worms. Trojan horses and other malicious programs like Back Orifice that can wreak havoc on your PC? Chances are it is, if it's periodically linked to the corporate network.

These days, corporate antivirus protection is a centralized function of information technology. Someone installs it for you on your PC and notebook or, increasingly, distributes it over the network. The antivirus software runs in the background, popping up every so often to reassure you. "The trend right now is to automate the process entirely," says William Spernow. research director of information security strategies at Gartner Group Inc. in Stamford, Conn.

This move toward mor highly distributed, networked and automated antivirus protection will continue, according to antivirus experts. Some Internet service providers have recently started putting the software on their own equipment, hoping to catch the gremlins before they get anowhere near your PC. The ajor antivirus vendors also we server-based versions that watch for viruses entering through e-mail gateways and

programs like Microsoft Corn's Exchange and Lotus Development Corn's Notes. They're also merging antivirus protection into suites that provide one-stop security for corporations that extends to firewalls, blocking of objection able content and Web security. Another emerging trend, says Spernow, is personal firewalls which bring the fortresslike protection of network servers down to individual desktops.

But until the day comes

tous on all your networks, it helps to know a little about how to use the desktop variety, especially if you travel frequently or work at home with PCs tethered to the public In-ternet. I tried the three bestknown consumer products, in Spernow's estimation. 1 found little dil

among the programs. All three can scan for malicious ActiveX controls and lava applets coming off the Web and peer into zipped files and e-mail attachments. They also let you schedule scans, give you reminders to update your virus definitions online and provide Internet Explorer-like screens for picking specific files and folders to examine. But I give a slight nod to Trend Micro's PC-cillin for its zippy performance, user-friendly screens and rich links to online sup-

McAfee VirusScan are close hehind but not as consistently good in all three areas. Essex is a freelance writer in

port. Norton Antivirus and Gene's a solid product. It's

\$19.95 (\$29.95 downloaded)

Norton AntiVirus 2000

utes, and I had no trouble update it over the Web or setting it up to



PC-callin 6.0



Antrim, N.H. McAfee VirusScan 4.03



-To-Host ectivity, Control

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utomatic HTML conversion. CUSTOM DEVELOPMENT TOOLS: **VB** script and Interdev Com

Data Warehousing

DATA WARRHOUSE turns raw information into a

useful analytical decision-making. "The fundamental question that gets addressed in about 1,001 forms is: Which customers are buying or using what products and services, and when and where?" says Lou Agosta, a Giga Information Group Inc. analyst in Chicago. "If you know the answer to that question, then you're able to guide

your business." Companies often keep raw information in online transaction processing (OLTP) systems, which track day-to-day operations - each sale, purchase and inventory change, for example. But OLTP systems aren't well suited for answering questions that affect the past, present and future directions for a business - questions like: What are the historical trends in unit costs vs. growth in sales to customers in

To answer those kinds of questions, a company needs an analysis system with the ability traction process may occur every day, so any changes to to perform ad hoc queries and crease specialized reports. The raw material for analysis is a ined view of all the relevant data a company has - a data warehouse. The warehouse stores information from OLTP systems and other sources of raw data - external systems, for example - in a single location, cleaned and processed into the right formats for analysis, such as sum--ries and derived data.

etalata Margrints Because information is com-

ing from many sources, each with its own view of the data, a npany must create an entera consistent view of its information. This metadata is the blueprint for the pieces of the data warehouse architecture.

The process of transforming raw data into a data warehouse involves several steps: extracn, consolidation, filtering, DIFINITION

A data warehouse is a database that collects business information from many sources in the enterprise, covering all aspects of the company's processes, products and customers. The warehouse provides business users with a multidimensional view of the data they need to analyze business conditions.

lectively known as data warehouse generation. Generation is at the heart of the warehouse infrastructure: most of the effort in a data warehouse project is spent on this pro Doing it right means the difference between finding answers that are valuable and answers that are useless.

Here's what each of the steps Extraction: This step involves taking the data out of its original database and transferring it to the data warehouse infrastructure. Companies often place restrictions on what is extracted. For example, the ex-

Transforming Data

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e, warehouse or data ty A common set of

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than 24 hours are impored. Consolidation: Consolidatio is the process of combining data from several sources into one database. To get a complete view of a customer, a company may consolidate data

from order entry systems, sales contact databases and technical support databases.

Filtering: Not every piece of data is needed. For example, a company may want to know

which products customers have ordered but not need the confirmation number used to process a sale. Filtering picks out the relevant data and removes duplicate entries. Cleansing: The quality of an

answer is only as good as the the raw-data sources older quality of the data used to derive that answer, so it's important to cleanse the data to improve the accuracy of the data in the warehouse. The classic example of poor-quality data is a single customer with multiple entries - for example. John Jones, Jack Jones and J. ones. It requires some intelligence on the part of the cleansing software to identify and

correct such data. Conversion: Conversion, also pine the raw data onto new data fields within the warehouse data model and translating the data into the format used by the warehouse. For example, the original suppl data may count widgets by the gross, while manufacturing data tracks widgets individu ally. In a data warehouse, the units of measure must be the same in order to get useful analysis results.

Appropries: Often the value of a data warehouse is in the summarized and derived data it contains, as apposed to the raw data stored in OLTP sources. The aggregation step sorts and combines data into useful metrics for analysis. For example, while the raw data may track individual orders by individual customers, a more useful measure of sales might be orders of a particular prod-uct family. The aggregation ocess generates these new calculated sales numbers.

Inhason is a technology and siness writer in Scattle.

UST THE PACTS Data Marts and Operational Data Stores

A data ment is a specialized set of bu information focusing on a particular aspect of the enterprise, such as a dispartment (postsale support). The information in a

An opportunit data store is a helpful of an OI TP system and an applytical system. contains information that's impaintly up-

led on an asinoc bevis, often in response to changes in the OLTP system, as one to the scheduled updates of a data wave house. The data within an operational sh gated to a limited extent. Its purpose is to woo') affect the performance of the

would like to learn about on Quick Study? Please send your ideas to



A Computerworld survey shows that most IT managers are taking a wait-and-see approach to Windows 2000 By Cynthia Morgan

OU CAN LEAD am IT manager to Win-dows 2000, but you can't make him deploy, at least not until after the first service pack ships.

Information technology managers recently surveyed by Computerworld said they won't even begin Windows 2000 migration until the operating sys-tem has been shipping for more than six months. That means that if Microsoft Corp. makes its promised Feb. 17 goal for general distribution, corporate users won't see much of Windows

0 until early fall. We surveyed 103 IT managers who we been actively beta-testing one or ore versions of Windows 2000 to en about their deployment plans. The managers serve an average of 3,352 users. About 29% support organizations of 10,000 or more users.

All have at least one version of a Windows operating system somewhere in the networked enterprise they're managing; 96% said they supported a combination of Windows 95 and Windows NT 4.0 on at least part of the n work. But while 23% of our managers ran Microsoft-exclusive networks and 30% still maintain Windows 3.x on some clients, the rest of those surveyed support a variety of client and network operating systems. Novell Inc.'s Net-Ware, for example, still commands roughly 39% of the networks run by our respondents. The Unixes — HP-UX, Solaris, AIX and Linux — show up in 50% of these networks, with the lion's share divided roughly equally between HP-UX, Solaris and AIX.

Lasking Farward to Win 28.

The majority — about 62% of respondents — said Windows 2000 is a definite improvement over Windows NT 4.0. Stability tops the list as the key advantage these managers see in moving to Windows 2000, "IMicrosoft is I detectionable or major to the control of the con directionally moving toward an enter-prise operating system. It will be a nice follow-on to NT," said one. Respondents mentioned the new Active Directory Services only slightly less of-ten, with added security, better user experience, improved connectivity and

But even after the Microsoft hype machine has spent months selling Windows 2000, 38% of those surveyed weren't sure the new operating system would live up to its promises. In fact, 6% of these beta testers said Win 2K was "worse" than the current Windows NT 4.0. Our managers gave ma reasons for their skepticism: "Windows 2000 is just too big an operating system. The performance require-ments are too high," said one. "All the promised portions for the modules or another respondent. "The things peo-ple were looking forward to like clus-

tering have been taken out." Still, all the managers we surveyed intend to migrate users or servers to at least one version of Windows 2000 over the next two years. Windows 2000 Professional, the client/desktop version of the new operating system, was the most popular migration choice; 53% of our respondents plan to deploy it to at least some users. Yet very few - only 19% of those who will move to Win 2K Professional - will

start a migration within six months of product introduction. The majority, 67%, won't start to deploy Win 2K Pro until the product has been in widespread general availability for six to 18

Past Reputation Haunts Win 2K "[We'll] wait for stability," wrote one IT manager, "to rule out major bugs," Another put it more bluntly; his company's delay in adopting Windows 2000 Professional was "because of the

unreliability of Microsoft products." And many simply haven't had time to absorb the last Windows upgrade. "[We're] still completing our Windows 98 migration, so the cost of migrating again will

be a factor,' said another. Very few expect the new og system to impact exi ing plans for developing custom-

ized or in-house applications.
"Directory services and security will be the biggest issue, but not that big ecause most of our developm done more in Unix," said one

manager. Migration to Windows 2000 will be a lengthy process for most: Only 37% expected to have completed mi-gration within three months of starting the process. That's not surprising, since the rigorous hardware require-ments cited by many respondents are likely to require hands-on work at the client level. About 45% of our respon-dents predicted they'd be spending as much as 18 months in making the tran-sition to Windows 2000 Professional.

Server Doployment Faster

The server side tells a slightly differ-ent story. While there's little difference between the time managers plan to wait before starting deployment of both front and back ends of the new operating system — most plan to wait at least six months before installing Windows 2000 on servers - the mition process itself should take much less time. That's not surprising, given the ratio of servers to client desktop

PCs on most enterprise networks.

Most of those who plan to add Windows 2000 Server Edition to their networks — about 35% of our group — expect deployment to be comp ete within

said they will wait six months or more before migrating to Windows 2000 a. I: Me MMEDIATELY FIRST 6 NOS 8-12 MOS Professional Edition 4% 15% 40% 27% 13% 1% Server Edition 646 11% 47% 29% 1196 0% Advanced Server Editio 9% 9% 32% 41% 0% 9% toCenter Edition 18% 27% 27% 9% 10% its said they expect server migration to take less than a year, but deal 6-12 MOS 2-16 MOS

Professional Edit 29% 20% Server Edition 19% 3654 31% 3% dvanced Server Edition 27% 27% 32% etsCenter Edition 9% 27% 36%

MT 4.0 96% 50% 11% 39% 66% 24% 97% 10% 5%

5%

80% 73% 4044 62% Development changes 55%

53% 39% 21% -Center 1950

ree months. But migrations still we start until at least six months after the server edition is introduced. "We're spending so much on Windows NT 4.x,*
said one manager who plans to delay
migration until 18 months after its intro-

ms #T 3.0

es 96

Windows 95

Windows 3.x

duction, "that it will probably take that long to be able to spend a bundle again." The more complex deployments needed for Advanced Server and Data-Center editions of Windows 2000 will take longer. More than half of the managers expect the migration process for both versions to take between three months and a year. Less than 9% expect to complete a DataCenter migra tion in less than three months.

The need to train IT staff to support the new operating system is paramount managers said. In fact, Windows 2000's steep learning curve was frequently cit-ed as one reason for lenethy migration

nes. The majority of managers we questioned were most anxious to have support staff acquire skills in user managrencet and working with the new Ac-tive Directory. But other new features of Windows 2000, such as remote access and security technologies, will re-

quire training as well.

Interestingly, while many cited the high cost of migration as a key factor in delaying the move to Win 2K, few managers had a firm grasp on actual dollar amounts at this point. Only 19% of those surveyed would even venture to guess what a Win ZK migration was going to cost their companies; their es-timates ranged from about \$7,000 to \$8 million. In a world where IT managers are increasingly called on to reduce total cost of ownership, that uncertainty doesn't bode well for speeding up the Windows 2000 timetables.

ness - not business-to-con-

sumer - was the hot Web mar-

ket. Whereas business-to-busi-

ness e-commerce was \$43 bil-

lion in 1998, it's expected to

reach \$1 trillion by 2003, ac-

cording to Cambridge, Mass-based Forrester Research Inc.

Meanwhile, the consumer mar-

ket will grow from \$7.8 billion in 1998 to \$108 billion in 2003.

Cisco and Dell showed how

businesses could succeed on

the Web, but electronic mar-

ketplaces also began sprouting

exchanges, with names like

Today, there are 300 to 400

of these exchanges, such as

Plastics.net and Chemdex.

They are still in their infancy

with "maybe 500 to 700 com-

panies actually buying through

some sort of marketplace scheme," says Barbara Reilly, a

research director at Gartner

Group Inc. in Stamford, Conn.

But prospects for future

growth are hot.

up as more neutral tradi

FastParts and PartNet.

More Than a Tren

Technology **Happenings**

III Tracking starts on The de Jager Yea des. a collection of stock ns in Blace-hone lives, It auros 100% in its first year of operation.

m The domain name business.com is sold for \$150,000. Two years later, the name would set for \$7.5 million. hiticrosoft Corp. releases Office 97.

 Using 250 bried workstations, a grad edent brooks a 40-bit encryp code in less than four hours.

m 3Com Corp. agrees to buy modern maker U.S. Robotics in a stock trans action valued at \$6.6 billion. nes to acquire Cascado Ci

es Corp. for stock valued at about ed Micro Devices Inc.

ents the KS micromorposture oft agrees to buy WebTV Na lac. for \$425 million.

FTE Corp. agrees to purchase inter-proneer BBM Corp., in a transaction at about \$615 million. tel Corp. unvols the Ponture II

tal Equipment Corp. Hes a against Intel, alleging that key its of Intel®s Punthern Inc we

and, to transpole

rel judge orders Miloreaett to oling Explorer with its opesat-

Other Notables

n March, Comet Hale Bopp is the closest it will be to Earth

OPvincens Dinna, 35

Perhane As Societas & Sets

E-Commerce Expands

N 1997, IT WAS TIME to get serious about Internetbased electronic commerce. Just one year earlier, a company could put some brochuseware up on the Web and not be laughed at (too much). But by the end of 1997, companies without an

e-commerce strategy - or without a vision of how their industry was changing and how they should respond -were starting to worry about becoming obsolete, or at least less competitive.

Not that this fear always translated into action. "There was still a lot of skepticism about the Internet in 1997, especially from large compani says Walid Mougayar, president of Cybermanagement Inc., a consulting firm in Toronto. "They did feel threatened by it, but they didn't know exactly the scope of the actions they should take "

And little wonder for that uncertainty. In addition to security fears, bandwidth concerns and underdeveloped technologies, the firms that today provide end-to-end platforms for e-commerce Web sites, such as Broadvision Inc. and Interworld Corp., were in their infancy. As a result, Mougayar says, "there was still a lot of homegrown software and uncertainty in terms of which direction to take in software platforms. It wasn't easy to put up a world-class site."

Seeds of E-Commerce

The fear, uncertainty and doubt extended to the conmer market. All told, there were more than 100,000 retail-ers on the Web in 1997. But while the general public was mesmerized by the likes of Yahoo Inc. and Amazon.com ne Speaker Howt Gingrich is nd guilty of othics violations.

start's onslaught that it took Amazon to court for claiming A U.S. Appeals Court upholds a California ban on affirmative action.

OCTOBER HOVEMBER DECEMBER

norfolk-county.com.

tor to Computerworld. Contact her at marybrandel@

place deal with Commerce-One Inc. "Every company is ndel is a frequent contribu

recent mergers of Internet

companies and large firms like CBS Corp., as well as General

Motors Corp.'s recent market-

spending real money now."

Mother Tores

hisack is produced with the assistance of The Computer Museum History Center in Mountain View, Calif.

Inc., which had a wildly successful public offering in the Amazon was seeing 50,000 ness — not business-to-out

middle of the year, security daily visitors, and it posted concerns and a general lack of sales of \$147.8 million. Barnes experience with the Web kept actual purchasing low. For instance, the num ber of households in the U.S. purchasing emocries onli

was just 10,000 in 1997, compared with a forecast 7 million in 2002, according to New nearly all were bleeding red York-based charketer's 1996 ink. Not to mention that In-

eCommerce Report. Similarly, ternet-based ventures such as

CEO Jeff Bezos' Amazon,com had a suc-

ne music sales tot

to Jupiter Communications Inc.

in New York, but projections

Still, with Amazon acting as

the leading light, retailers had

are for \$1.1 billion in 2002.

had become skeptical about Internet initial public offerings (IPO). Despite the hundreds of IPOs in the years preceding,

Nets Inc. and IBM's World Avenue, an online shopping mail launched the year before, had already gone out of business.

& Noble also

But in gen-

eral. Wall Street

faunched its

site that year.

Truly, 1997 was a time with more questions than answers about how to succeed with a Web strategy. No one, it seemed, was making money on the internet that year no one except Cisco Systems Inc. and Dell Computer Corp. "They legitimized the chan-

In many ways, e-commerce is still in its infancy today, and many hard lessons are still being learned. But compared nel," says David Alschuler, a vice presiwith the situation two years dent at Boston-based ago, big companies are now dipping much more than a toe in Web waters. Aberdeen Group Inc. By the end of 1997, "The deals in 1999 are very serious," Mougayar says, citing

Cisco rang up \$3 billion in net-\$49.4 million in 1997, according working equipment sales from its Web site, while Dell had \$1 million per day in PC sales from its site. All told, 39% of Cisco's \$6.4 billion in revenue came in via the Web site in to take notice of the Web trends. Traditional bookseller Barnes & Noble Inc. was 1997, and that share has grown to 83% today. Dell's Web sales have grown to more than \$35 threatened enough by this upmillion per day.

Both success stories began to to be the world's biggest book- crystallize

for people with the right set of

But what are the right skills?

Any skills, say IT headbunters.

"No particular domain is hot-

ter than another," says John

Maher, division director at

Houston-based RHI Consult-

ing Inc. in Phoenix. "It seems

to be a very busy market for all

The lack of IT professional

in Phoenix is skyrocketing

salaries - with skilled senior

than \$80,000 annually. "Candi-

dates can pretty much name their price," says a vice presi-

dent at one of Arizona's largest

insurance firms, who asked

The elderly and infirm con-

that her name not be used.

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of them'



Desert Oases

Looking for a dry climate with a hot job market? Phoenix or Las Vegas may be just the paradise you're after By Mark Baard

Phoenix Rising

when former Vice President ban Quayle said, "I love Californis: I practically grew up in Phoenix," perhaps be was foreshadowing Silicon Valley's cross-border spread to the

nation's sixth-largest city.
It only takes an hour to fly
from Los Angeles to Phoenix.
Arizona businesses hope information technology professionals will make the trip and
help meet the demands of
Greater Phoenix's fast-growing population.

"Phoenix is already becoming a technological haven," says Mark Badolato, a programmer at Phoenix-based Quepusacom Inc, a Spanish and English news and entertainment Web site. "Just look at Motorola, Intel and Insight (three major employers in the areal. Their presence here shows that large companies believe they can attract IT professionals to the region. Plus. there doesn't seem to be any shondown for tinue to be lured by Phoenix's dry, hot climate, and the health care and insurance industries are growing and modernizing to capitalize on this lucrative market. With the lack of skills in the local job market, there are more nontechnologists be-

ing tapped for IT positions.
Right now, the IT departments in the health care industry are filled with people with clinical backgrounds, "according to Emory Heisler, director of information management at St. Joseph's Hospital and Medical Center, Phoenix's largest

Heisler says hospitals rely heavily on clinical management software from Delray Beach, Fla.-based Eclipsys Corp. and Kansas Ciry, Mobased Cerner Corp.

hospital.

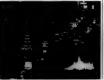
"But even if you don't know the clinical function of specific packages," he notes, "any general software experience will make you a hot commodity."

Vegas Payoffs LAS VEGAS IS Decoming an

oasis not just for high rollers and retirees, but for IT professionals as well. Its new mayor, Oscar Goodman, has promised to bring high-tech companies to the city's rougher downtown business district. "I think the future in Las Ve-

gas is a bright one for those in the technology industry," Goodman says. "As we continue to attract companies to Las Vegas, they will require technical experts to help them keep pace with changing technology." Headbusters share Good-

with changing technology."
Headhunters share Goodman's rosy outlook. "Vegas is really growing op in the way it attracts and retains IT professionals," says Jim D'Amora, Las



Up-and-Coming IT Skills

Oracle Windows/NT

O Visual Basic

Vegas branch manager at Eastridge Infotech, a technology staffing firm. Businesses are paying higher salaries and are more willing to pay relocation costs than ever before." Network administrators and

analysts draw salaries between \$40,000 and \$50,000 annually, and those in sensior positions earn as much as \$70,000, according to D'Amora. And Las Vegas' cost of living is still far less punishing than it is in other major cities.

other major cities.

The hottest jobs will be in relational database management and software development. As for network administration, D'Amora says, 'midsize companies are continuing to move away from AS/400 toward

Windows NT and Unix."
But many businesses are bucking the NT and Unix trend with server-based software from developers like Fort Lauderdale. Fix-based Citrix Systems Inc.

"A lot of hotels are setting up thin clicents to leverage their server investments," says Mike Cassidy, an independent IT consultant who settled in Las Vegas after learning network management in the U.S. Army. "There are going to be a lot of opportunities in Vegas for people who can support serverbased software in the coming

City officials and others might hope for a broader economic base down the road, but Las Vegas' immediate future is still in the hands of the hottes and casinos. Still, living in a gambling town has its psyroffs.

"The whole town is centered around a 24-hour lifetryle." as casino dealer. "You can buy groceries any time you want." but

Baard is a freelance writer

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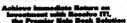
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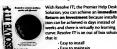
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WEEK IN STOCKS



Red Hat Stock on Wild Ride Lately

Real news, rumors boost shares for Linux company

URING THE PAST two weeks, investors have sent Red Hat Software Inc. (Nasdaq:RHAT) stock soaring to a market value more than double that of the established and respected net-

established and respected network operating system vendor Novell Inc. (Nasdag NOVL). After surging in the days

After surging in the days surrounding Thanksgiving, the Durham, N.C.-based Linux vendor gave back \$26.625 on Nov. 30° and then re-

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gained \$4.94 per share last Wednesday to close at \$214.94 per share. That price was still more than \$90 higher than its Nov. 22 close of \$124.63. In the four trading days from Nov. 23 to Nov. 29, Red Hat's closing price climbed \$112 and hit a one-day high of \$254.

a one-day high of \$254.

Volatility of technology stocks aside, analysts said the activity shows wide confidence in both the technology and future of Red Hat.

sts sau the activity shows wase dence in both the technology and e of Red Hat.

"Linux and open source are very real phenomena," said Christopher Galvin, an analyst at Hambrecht & Quist Inc. in

at Hambrecht & Quist Inc. in San Francisco. He said Red Hat isn't only a leader in the Linux market; it's also "one of the few ways to play the [Linux] opportunity in the market." But Linux and Red Hat have had

some tangible and positive news recently, including the following: no No. No. St. US. District Judge Thomas Penfield Jackson ruled that Microsoft Corp. (NasdagMSTF) is a predatory monopoly. The ruling has boosted Microsoft's competitors, although it has public relations value for them only in the short term, Galvin said.

no materitem, carrier state.

We On Nov. IS, Red Hat amnounced the acquisition of Cygnus Solutions Inc. in Scunnyvale, Callf. The move increases Red Har's customer base and gives it access to tools needed to build applications for embedded systems running Red Har's Liux versions, Gabrin said.

I ast week, The Wall Street Journal named Red Hat one of the most influence Red Hat one of the most influence Red Hat one of the most influence

ential technology companies.

Alex: Baluta, an analyst at Merrill Lynch & Co., wrote that enthusiasm for Linux has driven Red Hat's market capitalization to the sky-high eatio of more than 500 times the company's revenue. B

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Continued from page I

Outsourcing

Tyco, a Bermuda company with U.S. beadquarters in Exeter. N.H., operates in more than 80 countries. Usually, small to midrine companies seek out application service providers, which host and rent applications to businesses. with users accessing the appli-

cations over the Internet. As companies seek to focus on competitive advantage. they're increasingly willing to hand off complex but routine systems to service providers. The U.S. application service provider market is expected to jump from \$150 million this year to \$6 billion by 2001, acding to Forrester Research Inc. in Cambridge Mass.

wing Market

The worldwide high-end application service provider market - which includes enterprise resource planning applications such as those made by SAP - is projected to reach \$2 billion in 2003, according to research firm International Data Corp. in Framineham, Mass. The service provider that

landed the Tyco deal is Host-Logic Inc. A private company in Boca Raton, Fla., HostLogic opened for business just three nths area. It has about 50 employees and has offices in six countries, including Hun-

5-year deal with USi working Inc., which will host PeopleSoft financials Joint venture with Oracle Corp. to host supply-chain operations

over the Interpet Interliant Inc. will host Web services that TPM offers to United Nations Trade Point Rent PeopleSoft financials ocumentation and projects om Corio Inc.

gary, Germany and Hong Kong. HostLogic's international presence may have helped it secure the Tyco deal, said Albert Nekimken, an analyst at ogy research firm located in

Vienna, Va. "Companies like virtual e-business networks, but they nevertheless like their vendoes to he in close geographical proximity," said Nekimken. Tyco Senior Vice President Brad McGee said the company decided to outsource its SAP

applications to off-load some work from its IT staff and to get help integrating different IT systems as the company grows by acquisition. Last month alone, Tyco completed two purchases, including the electromechanical division of Germany's Siemens AG for \$1.1 billion in cash

More Apps Integration-Ready

Microsoft says its framework has 47

Microsoft Corp. said it has 47 applications and tools that we met entrance requireents to integrate with the

company's database and oper-The Microsoft Data Warehousing Framework 2000 alliance included 20 vendors when it was announced more than a year ago. It has grown to

assist customers in building or buying business intelligence applications and other tools running on the Windows 2000 operating system, SQL Server 70 database and the Office 2000 suite.

The integration between the third-party vendor applications and Microsoft products would be most attractive to

users running departmental applications on Windows NT. said Colin White, founder and analyst at DataBase Associates International Inc. in Morgan Hill Calif &

HostLogic charges, on average, \$500 per seat per month, and industry observers estimate that the Tyco deal could notentially reach several thousand sents. Outsourcing the hosti and maintenance of high-end enterprise software can cost a firm several million dollars per

year, said Nekimken. Atvoical Move

Typically, large companies shy away from outsourcing mission-critical applications because such arrangements don't allow for the kind of customization they need.

HostLogic President Chris Terry, however, said his company's strategy will be to de-velop standard application service provider business models for vertical industries and thereby deliver software that can address the specific challenges of Tyco's subsidiaries.

Tyco makes products and systems for the health care, electronics, telecomm tions and security industries. Tyco 'will need some custom configuration for any degree of success," said Rod on, an analyst at Bo based AMR Research Inc. At the same time, Tyco - or

any large company that outsources critical applications - needs to ensure that it doesn't ask for functionality or services beyond what the service provider can deliver, said "It's like going to a steak

house and asking for a vegetarian meal. You can get a vegetarian side dish, but you can't order a tofu steak," he said.

Costs Haunt ASP Market

Business fragmentation, lack of focus at heart of problem in growing market

AV MARK HA

PPLICATION Set vice providers (ASP) which see themselves as IT replacements for some organizations, are suffering from a lack of profits and business fragmentation that could stop market growth in its tracks

So said industry analysts, vendors and application service providers themselves at last week's ASP Summit here. as they wrung their hands over the future of their nascent market

In his keynote address, Rich Caruso, vice president of IP network applications at Nortel Networks in Brampton, Ontario, warned that profitability for application service pro viders is a major issue. "ASP margins are thin," he

said. "The most important thine in the next year is to make ASPs profitable, or else growth won't be there." To that end, companies like

Nortel and Newbridge Networks Corp. in Kanata, Ontario, have devised revenuesharing purchase and lesse op tions specifically for application service providers, so those companies' initial investments in technology will be mini-

Malcolm Stewart, a vice president at application service provider Verio Inc. in Englewood, Colo., said costs for running a data center are sub stantial. Just a single OC3 link to the Internet and 30 servers, for example, could run be-tween \$72,000 and \$158,000 per month, he said.

Most agree that those cos are only the beginning. "Hardware is not the real cost issue. said John McCrory, CEO of Applicast Inc., an application ser-

vice provider in Mountain View. Calif. It's really about such things as a provider's service and support staff, he said. "No one can handle everything well," McCrory said. You have to focus on your core compétencies."

This kind of focus, however, means that organizations that seek to outsource their IT operations have to either juggle multiple application service providers for special functions or select only special applications for outsourcing.

service providers such as Ora-

Split Responsibilities For example, application

cle Business Online, a division of Oracle Corp., and eGain Communications Corp. in Sunnyvale, Calif., offer only their own software running on their own data centers. Still others. such as Conxion Corp. in Santa Clara, Calif., provide, only infrastructure and no software This fragmentation has caused problems for application service providers that don't have the expertise to handle all the IT-related queries their services generate Marsha Blake, a vice presi-

cation service provider Commerce Corp., said her company is dependent on other service providers in its supply chain, "If any other one goes down, we are the ones getting the black eye," she said. Application service providers that aren't willing to invest in either technical staff or a robust infrastructure will have a difficult time compet ion, according to Deb Mielle. an analyst at Treilinge Network Strategies Inc. in McKinney,

dent at San Diego-based appli-

Texas "It all comes down to the cost issue," she said. "How much are you willing to pay for?"



THE BACK PAGE

FRANK HAYES/FRANKLY SPEAKING

Who's next?

ND HERE WE ALL THOUGHT the big problem was going to be Y2K. In downtown Seattle last Tuesday, nobody was thinking about 99 turning to 00. Tens of thousands of protesters who, for various reasons. opposite of the problem of the prob

Meanwhile, something else was running amok Tuesday in corporate cyberspace. Dozens of corporate sites were hit by a new version

IT is the

enabler of

global trade.

That makes

us a plump

target.

of the e-mail worm that caused hundreds of millions of dollars in damage last June — back when, as it happens, anti-free-trade protesters were rioting in London.

Coincidence? Maybe — but it won't be for

soop.

See, the World Trade Organization makes an easy target for those ottacking the ills of capitalism. Whether it's jobs shipped overseax, rain forests leveled or third-world workers exploited, the WTO seems to catch the blame.

That's why the WTO meeting.

sparked the biggest protest demonstrations in the U.S. since the Vietnam War, why hard hats and students and environmentalists and religious people and anarchists all converged on Seattle by the thousands. They see global free trade as what makes all those

problems possible.
Which means we're next. It
won't be long before they figure
out what we already know. Information technology — and especially the global Internet, the
World Wide Web — is what
makes global free trade possible.

After all, modern global supplychains carn etait without instantaneous data communication around the world. Multinational companies can't function without their global intranets and the extranets that connect them with business partners and customers. And e-commerce is the freest kind of free trade — any product or service, ordered at any time and delivered from anywhere. IT is the fundamental enabler

of modern global trade. Without it, the WTO is nothing more than a bunch of bureaucrats trying to find their way around Seattle. The WTO may make it legal, but IT makes it happen. That makes us a plump target.

Now understand: The vast majority of those

te sites were hit by a new version who doo't like global free trade do like IT. It's as useful to them as it is to their foes. Labor, environmental, wildlife and religious groups all use

IT to run their own organizations and the Internet to get their messages out to the rest of the world.

But then, the vast majority of those Seattle protesters just wanted to get their message out, too. Only about 1% were window-smashing.

tire-slashing rioters. And only a few will do whatever damage they can to IT — yours, your competitors', everyone else's. There are already plenty of crackers trying to back into your

systems just for fun or malice. Now some of them will decide it's a political statement. There are already virus writers trying to cripple your users and crash your networks. Now some will say they're just protesting

corporate greed.

There are already electronic vandals willing to shut down phone systems or even the Internet, just to show they can do it. Now some will claim they're

rebels with a cause.

Bogus? Sure. Every bit as bogus as the rioters who went to Seattle because they wanted an excuse to smash and loot and burn. But they doesn't make them any lets.

dangerous.

So tighten up your security.
Lock down your firewalls. Update your virus scanners. Beef up
your encryption. And make sure
all your IT people — and all your
users, too — keep a sharp watch

for the first sign of trouble. Because unlike Y2K, this won't be over on Jan. I. This one won't go away for a long, long time.

Hayes, Computerworld's staff columnist, has covered IT for 20 years. His e-mail address is frank, hayes@computerworld.com.

SHARK TANK

SO THIS BOSS - "Call him Setan," a plot fish suggests was called in to crack the whip on a late project. Without both ening to talk to the developm team. "Setan promised an alpha in nine months, half of what do velopment had estimated." Soon the horned one pushed out the premary development manager Then pushed out the project munager (she refused to inver les that fit the fictious reaction). Then cushed out the marketing person who'd pulled together the requirements. Then promised everybody a promo-

SPEAKING OF BOSSES, a gry worked as a contractor for "a well-income telecommunications equipment multinational." His manager was sharip Dannals about the budget. One finds, the boas lowers the az. Sony, you're great, glowing recommendation, and can't allord you, etc.

tion. Then got canned Finally

dation, just can't afford you, est. Monday maming roles around. Yes, the very read Monday. The boss calls the guy, Acts how soon he can come bank 'Decause he decovered they were going to be shorthended.' What was your first clue. Sherlock?

A PILOT FISH REPORTS opining an online account with a tech

vendor to place a Christmas order, Keys in the requested

orbit. Anys in the reducerous min, including coeff card number (despite warning bells). On his e-mail coeff coeff e-mail - complete with user ID and password in the free and clear. And sare enough, onlyboth with the uner ID and password can see the entire credit card number at the size. Sharty perdicts, a very many Divisions for e-mail creditors.

SPEAKING OF SECURITY, one Carlester had a friend taking a networking course of a local business college. The Tankster was leed off because the instructor was leaching the class about Back Orrico. the hadding lock that can take control of a remote server. But the Shark

says forewarred is browned. What's really had is that the instruction gave the entre class. Admin rights to the sentench at the beginning of the sentench at the beginning of the sentench.

"Its the season, Tandaters. All the Shark wents for Christmas is det. One bit furtire shartly the computerweeth come. If your form arms, we shalf a great T-shart is your stocking. For delphy dimin your stocking. For delphy dimin your stocking.

The 5th Wave



"You ever get the feeling this project could just up and die at any moment?"

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